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# Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development

Guest Editors

**R.Ravi Kumar**

**H.Allwyn Hubert Jebasingh**

**M.Solomon Vimar Raj**

**T. Vasanthi**



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# Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development

**Guest Editors**

**R.Ravi Kumar  
H.Allwyn Hubert Jebasingh  
M.Solomon Vimar Raj  
T. Vasanthi**

**Nazia College of Arts and Science  
Kariapatti  
Tamil Nadu | India**

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## Verso Page

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# ABOUT THE COLLEGE

## OUR MOTTO

### **"Empowering the Youth through Employment and Entrepreneurship"**

The college was established in the academic year 2010–11 and functioned under the name “The Nazia College of Arts and Science” until May 2017 under the previous management. Thereafter, the institution was brought under the administration of CEOA Educational Society, Madurai.

The College is ideally located on a sprawling 99-acre, serene campus facing the National Highway connecting Madurai with Tuticorin. The well-ventilated classrooms and peaceful, unpolluted surroundings provide an ideal atmosphere for students to enjoy their college life while pursuing their academic and career goals.

The College is committed to equipping students to meet current challenges and develop the technical and professional skills required to succeed in a competitive industry. The primary objective of CEOA is to empower rural students and provide them with opportunities to maximize their intellectual potential and achieve their aspirations.

Situated in an industrially and educationally developing area, the College strives to provide accessible, quality higher education to students. The campus offers a pleasant, pollution-free atmosphere that is well suited for an integrated educational environment and holistic student development.

The College spans a serene 99-acre campus along the Madurai–Tuticorin Highway, offering a calm and pollution-free environment. Its spacious and well-planned surroundings create an ideal setting for focused learning, personal growth, and academic excellence.

The institution provides modern infrastructure and student-oriented facilities, including spacious classrooms, a well-equipped library, digital learning resources, hostels, smart classrooms, and coaching facilities for competitive examinations. These facilities support the overall academic, professional, and personal development of students.

The College is known for its consistent academic excellence, with students regularly achieving top ranks and outstanding results. Its strong focus on quality education, placement opportunities, skill development, and career-oriented learning continues to drive the success and progress of the institution.

## **DEPARTMENT OF COMPUTER SCIENCE**

### **ABOUT THE DEPARTMENT**

Instituted in the year 2010, the Department of Computer Science has been steadily progressing through excellence in teaching, learning, research, and other professional activities. The Department is committed to providing enduring quality education and nurturing students to face life with confidence, competence, and aspiration.

The Department aspires to achieve international recognition as a leader in Computer Science through coherent and innovative activities in education, research, development, and industry collaboration. It provides a dynamic academic environment in which students are encouraged to explore emerging technologies, develop problem-solving abilities, and apply their knowledge to real-world challenges.

The Department is supported by experienced and dedicated faculty members with expertise in diverse areas of Computer Science, including Data Mining, Information and Network Security, Communication Networks, Databases, Algorithms, Image and Video Processing, Cloud Computing, Big Data, Software Engineering, Wireless Communications, Semantic Web, and Software Development.

The academic curriculum covers fundamental areas of Computer Science such as programming, software engineering, web technologies, database systems, big data, data visualization, and human-computer interaction. It also provides exposure to major areas of Artificial Intelligence, including computer vision, natural language understanding, expert systems, heuristic optimization, intelligent agents, machine learning, and neural networks.

Along with technical knowledge, students are sensitized to ethical issues, data privacy, cybersecurity, and the responsible use of information-processing systems. They are trained to work effectively in teams, undertake scientific and technical activities, translate knowledge and

research outcomes into professional practice, and communicate and present their ideas convincingly.

The Department strives to create well-rounded professionals who combine strong technical foundations with creativity, critical thinking, communication skills, ethical awareness, and an entrepreneurial mindset. Through continuous learning and industry-oriented education, students are prepared to contribute meaningfully to society and to the rapidly evolving field of Computer Science.

### **VISION**

To provide the right environment, strong values, and quality education that enable students to become competent and true professionals with excellent skills, positive attitude, confidence, and the ability to shine in society.

### **MISSION**

- To impart quality education to students.
- To create and disseminate knowledge for the betterment of mankind.
- To establish a center of excellence in collaboration with industries, research laboratories, and other agencies to meet the changing needs of society.
- To provide individual attention and enable character building.
- To encourage and develop entrepreneurial skills among students.



## Resource Persons



### Mr. S. Siva

IBM India Pvt Ltd  
Infrastructure Specialist  
Bangalore



### G. Vijay Dhanasekaran

Photon Interactive Pvt Ltd  
Technical Lead  
Chennai



### Arun Surath Kumar.K

Ravenna Technology  
Kurnatham International  
Senior Quality Analyst  
Chennai



### T. Sharathkumar

Cognizant Technology  
Solutions  
Sr. Business Analyst  
Coimbatore



# 100%

Hands-on Learning  
& Practical Exposure



## PATRONS

### Mr. R. Ravi Kumar

MCA., M.Phil., B.Ed.,  
**Organizer**

### Mr. H. Allwyn Hubert Jebasingh

MCA., M.Phil., B.Ed.,  
**Co-Organizer**

## ORGANIZING COMMITTEE

### Mr. M. Solomon Vimal Raj

MCA., M.Phil.,

### Mrs. T. VASANTHI

MCA.,

### Mrs. M. Kiruthika

MSc., MPhil, B.Ed.,

### Mrs. V. Lakshmi Priya

MCA, M.Phil, B.Ed.,



## CEOA COLLEGE OF ARTS AND SCIENCE

(Affiliated to Madurai Kamaraj University)

Kariapatti – 626 106.



## INTERN DEPARTMENTAL CONFERENCE

**on**  
“Applications of Artificial Intelligence and  
Machine Learning Concepts for Smart  
Education and Career Development”



Date  
October 8 & 9, 2026  
(Wednesday &  
Thursday)



Time  
09.30 a.m. –  
04.30 p.m.



Venue  
CEOA College of Arts  
and Science,  
Kariapatti – 626 106

*We cordially invite you to grace the  
occasion with your valuable presence.*



Organised by  
Department of Computer Science  
CEOA College of Arts and Science

With Regards  
HOD & Faculty Members  
Department of Computer Science  
CEOA College of Arts and Science

**AI | INNOVATION | BETTER TOMORROW**

**INTER-DEPARTMENTAL ONLINE CONFERENCE ON  
APPLICATIONS OF ARTIFICIAL INTELLIGENCE AND MACHINE  
LEARNING  
CONCEPTS FOR SMART EDUCATION AND CAREER DEVELOPMENT**



*Department of Computer Science, CEOA College of Arts and Science, Kariapatti*

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**MESSAGE**

***"Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development"***

It gives me immense pride and joy to share this message for the International Conference on “Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development”.

In today's rapidly evolving digital era, Artificial Intelligence (AI) and Machine Learning (ML) are driving foundational transformations across modern education and professional sectors. Smart educational frameworks powered by AI facilitate tailored learning paths, adaptive evaluation systems, and intelligent mentoring, enabling educators to recognize individual student potential and address learning gaps with data-backed precision.

Furthermore, machine learning concepts play a pivotal role in career guidance by providing predictive market insights, automated skill-gap analysis, and customized career pathways aligned with emerging industrial trends. Embracing these advanced methodologies equips students with critical thinking capabilities, adaptability, and the essential skills required to thrive in a dynamically changing global job market.

I extend my heartfelt wishes to all the academicians, research scholars, delegates, and participants. May this initiative foster insightful discussions, meaningful research collaborations, and impactful contributions toward smart education and career mentoring.

Thank you, and I wish the conference grand success!

**Mr. M. Packianathan, IRS.**

Director, CEOA College of Arts and Science, Kariyapatti

## PRINCIPAL MESSAGE

### Inter-Departmental online Conference on “Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,”



*“The future belongs to those who embrace knowledge, adapt to change, and transform ideas into meaningful innovations.”*

It gives me immense pleasure to extend my warm greetings and heartfelt wishes on the occasion of the Inter-Departmental Online Conference on “Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,” organized by the Department of Computer Science at CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026.

We are witnessing a remarkable transformation in education through the advancement of Artificial Intelligence and Machine Learning. These technologies are creating new opportunities for intelligent learning, personalized education, data-driven decision-making, and innovative problem-solving. Understanding these developments is essential for preparing students to meet the challenges of an increasingly technology-driven world.

The conference was enriched by the valuable contributions of distinguished industry resource persons: Mr. S. Siva from IBM India Pvt. Ltd., Bangalore; Mr. G. Vijay Dhanasekaran from Photon Interactive Pvt. Ltd., Chennai; Mr. Arun Surath Kumar K. from Ravenna Technology, Chennai; and Mr. T. Sharathkumar from Cognizant Technology Solutions, Coimbatore. Their professional insights and industry experiences helped participants understand emerging technological trends, practical applications, and the skills expected in the modern workplace.

This academic initiative also provided students with an excellent opportunity to present their projects, explain their ideas, exchange knowledge, and receive valuable feedback from industry experts. Such interactions help bridge the gap between theoretical learning and practical implementation while encouraging creativity, critical thinking, teamwork, and professional confidence.

I sincerely appreciate the Department of Computer Science for organizing this meaningful academic programme. I extend my gratitude to all four resource persons for sharing their expertise and to the college management, organizing committee, faculty members, and student participants for their valuable contributions.

I hope this conference will inspire our students to become innovative thinkers, responsible technology professionals, and lifelong learners who contribute to the advancement of education and society.

**With best wishes,**

**Dr. S. SHANMUGAPERUMAL**

Principal

Nazia College of Arts & Science

Affiliated to Madurai Kamaraj University

Kariapatti, Virudhunagar District, Tamil Nadu, India.



## VICE PRINCIPAL MESSAGE

### **Inter-Departmental online Conference on “Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,”**

*“True learning happens when knowledge is shared, ideas are explored, and innovation is put into practice.”*

It is a great pleasure to convey my sincere greetings on the successful conduct of the Inter-Departmental Online Conference on “Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,” organized by the Department of Computer Science at CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026.

Artificial Intelligence and Machine Learning are transforming the way people learn, work, and solve real-world problems. Their applications in smart education, automation, intelligent systems, and career development highlight the importance of equipping students with relevant technical knowledge and practical skills. Academic programmes focusing on these emerging fields help learners prepare for the opportunities and challenges of the digital era.

The conference featured insightful sessions by four experienced industry professionals: **Mr. S. Siva from IBM India Pvt. Ltd., Bangalore; Mr. G. Vijay Dhanasekaran from Photon Interactive Pvt. Ltd., Chennai; Mr. Arun Surath Kumar K. from Ravenna Technology, Chennai; and Mr. T. Sharathkumar from Cognizant Technology Solutions, Coimbatore.** Their valuable discussions offered students a better understanding of industry practices, technological advancements, professional expectations, and the expanding career opportunities associated with Artificial Intelligence and Machine Learning.

An important highlight of this conference was the active participation of students in presenting and explaining their projects. The opportunity to communicate directly with resource persons and fellow participants encouraged them to express their ideas clearly, strengthen their presentation skills, and gain constructive suggestions for further improvement. These experiences are essential for developing confidence, creativity, collaboration, and independent thinking.

I appreciate the college management and Principal for encouraging academic initiatives that promote knowledge and professional development. I also congratulate the Head of the Department, the organizing committee, faculty members, and students for their commitment and cooperation. My sincere thanks go to all four resource persons for making this conference informative and beneficial.

May this initiative motivate our students to continue exploring emerging technologies, transform their ideas into practical solutions, and build successful careers through continuous learning and innovation.

**With best wishes,**

**Mr. A. SENTHILKUMAR SELVAN**

Vice Principal

Nazia College of Arts & Science

Affiliated to Madurai Kamaraj University

Kariapatti, Virudhunagar District, Tamil Nadu, India.

# Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development

*Message from the Head of Department*



**R. RAVIKUMAR**

Head & Assistant Professor  
Department of Computer Science  
CEOA College of Arts and Science, Kariapatti  
Email: anyonecanseemeravikumar@gmail.com

*“Artificial Intelligence is the new electricity.” — Andrew Ng*

I am delighted to extend my warm greetings and best wishes on the occasion of the Inter-Departmental Online Conference on **“Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,”** organized by the Department of Computer Science, CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026. The conference brought together students, academicians, and industry experts to explore the growing impact of Artificial Intelligence and Machine Learning.

The sessions by distinguished resource persons—Mr. S. Siva of IBM India Pvt. Ltd., Bangalore; Mr. G. Vijay Dhanasekaran of Photon Interactive Pvt. Ltd., Chennai; Mr. Arun Surath Kumar K. of Ravenna Technology, Chennai; and Mr. T. Sharathkumar of Cognizant Technology Solutions, Coimbatore—offered valuable insights into emerging technologies, industry expectations, and career opportunities. Their expertise helped connect academic learning with practical industry applications.

The conference also gave students an excellent opportunity to share ideas, present and explain their projects, and receive feedback from resource persons and fellow participants. These interactions encouraged creativity, collaboration, and the development of communication, presentation, and technical skills. Such academic initiatives can inspire students to become innovative problem-solvers and prepare them for a rapidly evolving digital world.

I sincerely appreciate the college management, Principal, organizing committee, faculty members, resource persons, and participating students for their valuable contributions to making this conference informative and successful. I wish all participants continued success in their academic and professional journeys.

**With best wishes,**

**R. RAVIKUMAR**

Head & Assistant Professor  
Department of Computer Science  
CEOA College of Arts and Science, Kariapatti

# MESSAGE

It is a great honour to address the participants of the Inter-Departmental Online Conference on “**Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,**” organized by the Department of Computer Science, CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026.

Artificial Intelligence (AI) and Machine Learning (ML) are transforming the fields of education, communication, literary studies, and professional development. These emerging technologies provide innovative opportunities to improve English language proficiency, strengthen communication skills, and create personalized learning experiences. AI-powered educational tools can support grammar correction, vocabulary development, pronunciation practice, writing assistance, and reading comprehension, making English language learning more interactive, accessible, and effective.

An important highlight of the conference was the active participation of students in presenting their projects, explaining their ideas, and discussing their work with the resource persons and fellow participants. These exchanges encouraged students to think creatively, communicate their technical knowledge clearly, and gain constructive feedback. The discussions also helped them connect classroom learning with practical challenges and understand the skills required to succeed in a technology-driven professional environment.

The conference provided an excellent platform for students to present their innovative projects, exchange ideas, and interact with distinguished resource persons and fellow participants. Such academic initiatives promote interdisciplinary learning and demonstrate how technology can enrich language education and professional communication. I sincerely appreciate the college management, Principal, Head of the Department, organizing committee, faculty members, distinguished resource persons, and participating students for their valuable contributions to making this conference a meaningful and successful academic event. I am confident that this initiative will inspire students and educators to explore innovative approaches to learning, strengthen their digital competencies, and prepare for emerging opportunities in education and professional life.

I extend my best wishes for the continued success of the conference and hope that its outcomes will contribute to academic excellence, interdisciplinary collaboration, effective communication, and the meaningful integration of Artificial Intelligence and Machine Learning into language education and career development.

**Mr. R. Murugeswaran, M.Com. (CA), M.Phil., Ph.D.**  
**Head and Assistant Professor, Department of Commerce**  
**CEOA College of Arts and Science, Kariyapatti**  
**Email: [murugeswaran94@gmail.com](mailto:murugeswaran94@gmail.com)**

# MESSAGE

It is a great honour to be part of the Inter-Departmental Online Conference on “**Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,**” organized by the Department of Computer Science at CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026.

Artificial Intelligence (AI) and Machine Learning (ML) are transforming the fields of language education, communication, literary studies, and professional development. These emerging technologies provide innovative opportunities to improve English language proficiency, strengthen communication skills, and create personalized learning experiences. AI-powered educational tools can support grammar correction, vocabulary development, pronunciation practice, writing assistance, and reading comprehension, making English language learning more interactive, accessible, and effective.

From the perspective of English language and literature, AI and ML offer valuable applications in language analysis, automated translation, literary research, content development, and digital learning. Intelligent language tools can help students improve their writing skills, develop fluency, enhance critical thinking, and communicate more confidently in academic and professional environments.

In today's competitive global environment, effective communication and English language proficiency are essential for career advancement. AI-based tools can assist students in preparing resumes, improving interview skills, developing professional writing, and enhancing presentation abilities. By integrating technological knowledge with language competency, students can become better equipped to meet the expectations of higher education, industry, and the evolving employment market.

The conference provided an excellent platform for students to present their innovative projects, exchange ideas, and interact with distinguished resource persons and fellow participants. Such academic initiatives promote interdisciplinary learning and demonstrate how technology can enrich language education and professional communication. I sincerely appreciate the college management, Principal, Head of the Department, organizing committee, faculty members, distinguished resource persons, and participating students for their valuable contributions to making this conference a meaningful and successful academic event. I am confident that this initiative will inspire students and educators to explore innovative approaches to learning, strengthen their digital competencies, and prepare for emerging opportunities in education and professional life.

I extend my best wishes for the continued success of the conference and hope that its outcomes will contribute to academic excellence, interdisciplinary collaboration, effective communication, and the meaningful integration of Artificial Intelligence and Machine Learning into language education and career development.

**Mrs. I. Parsana Pitchai Megruba., M.A.,Mphil.,**

Head & Assistant Professor

Department of English

Email: [parsana1980@gmail.com](mailto:parsana1980@gmail.com)

# MESSAGE

It is a great honour to be part of the Inter-Departmental Online Conference on “**Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,**” organized by the Department of Computer Science at CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026.

Artificial Intelligence (AI) and Machine Learning (ML) are revolutionizing the aviation industry by transforming airport operations, airline management, passenger services, and aviation safety. These advanced technologies contribute to operational efficiency, predictive maintenance, intelligent scheduling, demand forecasting, and improved customer experiences. Their growing applications are creating new opportunities for innovation and professional development in Aviation Management.

From the perspective of Aviation Management, AI and ML offer valuable solutions for optimizing flight schedules, managing airport resources, analyzing passenger demand, improving baggage handling, and supporting data-driven decision-making. These technologies also assist in identifying operational risks, reducing delays, enhancing safety measures, and promoting sustainable aviation practices. Therefore, developing an understanding of emerging technologies is essential for students aspiring to build successful careers in the aviation and airline industries.

The conference served as an excellent platform for students to showcase their innovative projects, exchange ideas, and interact with distinguished resource persons and fellow participants. Such academic initiatives encourage creativity, critical thinking, communication, and problem-solving abilities while helping students understand how technological advancements can be applied to real-world industrial challenges. The interaction between academia and industry also provides valuable insights into emerging career opportunities and evolving professional expectations.

I sincerely appreciate the college management, Principal, Head of the Department, organizing committee, faculty members, distinguished resource persons, and participating students for their dedication and contributions to making this conference a meaningful and successful academic event. I believe that such initiatives will inspire students to explore innovative solutions, embrace digital transformation, and develop the professional competencies required to succeed in a technology-driven global environment.

I extend my best wishes for the continued success of the conference and hope that its outcomes will strengthen interdisciplinary learning, encourage technological innovation, and contribute to the development of future-ready professionals in Computer Science, Aviation Management, and other emerging fields.

**Mr. M. RamaChandran, MBA, M.Phil., Ph.D.**

Head & Assistant Professor

Department of Professional Courses

Email: [raamc1990@gmail.com](mailto:raamc1990@gmail.com)

# MESSAGE

It is a great honour to be part of the Inter-Departmental Online Conference on “**Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,**” organized by the Department of Computer Science at CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026.

Artificial Intelligence (AI) and Machine Learning (ML) are creating new possibilities in language education, literary research, and the preservation of cultural heritage. These emerging technologies offer innovative ways to learn, teach, translate, analyze, and document languages. In particular, they provide valuable opportunities to promote the richness of the Tamil language, preserve its literary traditions, and make its classical and contemporary works accessible to a wider audience.

From the perspective of Tamil language and literature, AI-based tools can support Tamil language learning, automated translation, speech recognition, digital archiving of ancient manuscripts, and the analysis of literary texts. Machine Learning can also assist researchers in identifying linguistic patterns, exploring literary themes, and organizing historical and cultural resources. The integration of these technologies into Tamil education can make learning more interactive, accessible, and engaging while encouraging students to explore the language through modern digital platforms.

The conference provided an excellent platform for students to present their innovative ideas, exchange knowledge, and interact with distinguished resource persons and fellow participants. Such academic initiatives encourage interdisciplinary learning by connecting computer science with languages, literature, humanities, and cultural studies. They also help students develop creativity, communication skills, critical thinking, and an appreciation of the practical applications of technology in diverse fields of study.

I sincerely appreciate the college management, Principal, Head of the Department, organizing committee, faculty members, distinguished resource persons, and participating students for their valuable contributions to making this conference a meaningful and successful academic event. I am confident that this initiative will inspire students and educators to explore innovative ideas, encourage interdisciplinary research, and make effective use of emerging technologies in education and professional development.

I extend my best wishes for the continued success of the conference and hope that its outcomes will promote academic excellence, technological innovation, and the meaningful integration of Artificial Intelligence and Machine Learning with Tamil language, literature, and cultural heritage.

**Ms. P. Ramalakshmi, M.A., M.Phil., B.Ed., NET**

Head & Assistant Professor

Department of Tamil

Email: [ramalakshmi.p@gmail.com](mailto:ramalakshmi.p@gmail.com)

# Message

It is a great honour to share my thoughts on the theme "Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development" at this conference.

Artificial Intelligence (AI) and Machine Learning (ML) have become powerful tools in modern education. They support innovative teaching methods, improve student engagement, and make learning more effective. Through AI-based educational platforms, students can access learning materials, receive instant feedback, and learn according to their individual needs. Machine Learning helps educators understand students' learning abilities and identify areas that require improvement.

In career development, AI and ML provide valuable support through career counselling, skill analysis, job recommendations, and employment trend predictions. They help students recognize their strengths, improve their professional skills, and prepare themselves for emerging opportunities in the digital world. The effective use of these technologies can create a smarter educational environment and open new pathways for professional growth. However, responsible implementation, data privacy, and equal access to technology must remain important priorities.

I firmly believe that the integration of Artificial Intelligence and Machine Learning will transform education and career development by making learning more accessible, personalized, and future-oriented.

Thank you, and I wish this conference great success in inspiring innovative ideas and meaningful outcomes.

**Mrs.M. Sumathi, M. Sc.,M.Phil.,**  
**Dept. Of Mathematics,**  
**CEOA College of Arts and Science, Kariyapatti.**  
**suma0492@gmail.com**

## **Applications of artificial intelligence and machine learning concepts for smart education and career development**

Department of computer science, Nazia college of arts and science, Kariyapatti.



### **Message**

It was a wonderful experience to be a part of the Inter-Departmental Online Conference on **“Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,”** organized by the Department of Computer Science, CEOA College of Arts and Science, Kariyapatti, on 8th and 9th October 2026. The conference included valuable and informative sessions delivered by eminent resource persons, Mr. S. Siva from IBM India Pvt. Ltd., Bangalore; Mr. G. Vijay Dhanasekaran from Photon Interactive Pvt. Ltd., Chennai; Mr. Arun Surath Kumar K. from Ravenna Technology, Chennai; and Mr. T. Sharathkumar from Cognizant Technology Solutions, Coimbatore. Their expert guidance and practical insights into emerging technologies, current industry trends, and professional expectations made the conference highly informative and beneficial.

The event also offered students a valuable platform to express their ideas, showcase their projects, explain their technical work, and exchange knowledge with industry experts and fellow participants. These interactive sessions enabled students to strengthen their communication, presentation, and technical skills while receiving constructive feedback and gaining fresh perspectives to enhance their projects. The meaningful interaction between students and resource persons helped bridge the gap between theoretical learning and real-world industrial applications.

I extend my heartfelt gratitude to the college management, Principal, Head of the Department, organizing committee, faculty members, esteemed resource persons, and enthusiastic student participants for their dedicated efforts and valuable contributions toward making this conference a successful, engaging, and memorable learning experience.

**H.Allwyn Hubert Jebasingh**,MCA,M.phil,B.ed,

Assistant Professor, Dept. of Computer Science,

Nazia college of arts and science, Kariyapatti.

**INTER-DEPARTMENTAL ONLINE CONFERENCE ON  
APPLICATIONS OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING  
CONCEPTS FOR SMART EDUCATION AND CAREER DEVELOPMENT**

Department of Computer Science, CEOA College of Arts and Science, Kariapatti



**MESSAGE**

***“Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development”***

It was a great pleasure to be part of the Inter-Departmental Online Conference on “Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,” organized by the Department of Computer Science at CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026.

The conference featured insightful sessions by distinguished resource persons, Mr. S. Siva from IBM India Pvt. Ltd., Bangalore; Mr. G. Vijay Dhanasekaran from Photon Interactive Pvt. Ltd., Chennai; Mr. Arun Surath Kumar K. from Ravenna Technology, Chennai; and Mr. T. Sharathkumar from Cognizant Technology Solutions, Coimbatore. Their valuable insights into emerging technologies, industry trends, and professional expectations made the conference an informative and enriching experience.

The conference also provided an excellent opportunity for students to communicate their ideas, present and explain their projects, and share their knowledge with the resource persons and fellow participants. Their active participation helped them enhance their communication, presentation, problem-solving, and technical skills while gaining valuable feedback and new perspectives on their projects.

The interaction between students and industry experts created an effective learning environment, bridging the gap between academic knowledge and practical industry applications. The sessions highlighted the growing importance of Artificial Intelligence and Machine Learning in transforming education, improving learning experiences, and supporting career development.

I sincerely appreciate the college management, Principal, Head of the Department, organizing committee, faculty members, resource persons, and participating students for their valuable contributions and support in making this conference a success. I am grateful for the opportunity to participate in this meaningful academic event and gain insights into emerging technological advancements.

**ABOUT THE AUTHOR**

**Mr. Aravind V S, M.Sc., M.Phil., B.Ed.**

Department of Computer Science

CEOA College of Arts and Science, Kariapatti

**INTER-DEPARTMENTAL ONLINE CONFERENCE ON  
APPLICATIONS OF ARTIFICIAL INTELLIGENCE AND MACHINE  
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**MESSAGE**

*“Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development”*

It was a privilege to be part of the Inter-Departmental Online Conference on “Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,” organized by the Department of Computer Science, CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026.

The conference brought together students, faculty members, and industry professionals to explore the growing role of Artificial Intelligence and Machine Learning in education, innovation, and career development. The sessions delivered by distinguished resource persons—Mr. S. Siva from IBM India Pvt. Ltd., Bangalore; Mr. G. Vijay Dhanasekaran from Photon Interactive Pvt. Ltd., Chennai; Mr. Arun Surath Kumar K. from Ravenna Technology, Chennai; and Mr. T. Sharathkumar from Cognizant Technology Solutions, Coimbatore—offered valuable insights into emerging technologies, practical applications, and current industry expectations.

An important highlight of the conference was the active participation of students in presenting their projects, explaining their ideas, and discussing their work with the resource persons and fellow participants. These exchanges encouraged students to think creatively, communicate their technical knowledge clearly, and gain constructive feedback. The discussions also helped them connect classroom learning with practical challenges and understand the skills required to succeed in a technology-driven professional environment.

The conference provided a valuable opportunity for academic interaction, knowledge sharing, and professional development. It strengthened the connection between academic learning and industry expectations while encouraging students to explore innovative ideas and emerging career opportunities. I sincerely appreciate the college management, Principal, Head of the Department, organizing committee, faculty members, resource persons, and participating students for their support, commitment, and enthusiastic involvement. Their collective efforts helped make the programme informative, engaging, and successful.

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# INTER-DEPARTMENTAL ONLINE CONFERENCE

## **Topic: “Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development”**

It is a great honour to share my message on the significant theme “Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development” at the Inter-Departmental Online Conference organized by the Department of Computer Science, CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026.

Artificial Intelligence (AI) and Machine Learning (ML) are transforming the educational landscape by introducing innovative teaching methods, personalized learning experiences, and intelligent assessment systems. These emerging technologies enable students to learn more effectively, understand complex concepts, and develop the digital skills required to meet the challenges of the modern world.

In the field of career development, AI and ML provide valuable support through career guidance, skill assessment, job-market analysis, and the identification of emerging employment opportunities. They help students recognize their strengths, improve their technical competencies, and make informed decisions about their future careers. Understanding these technologies is essential for preparing students to succeed in an increasingly technology-driven society.

The conference sessions delivered by distinguished industry experts offered valuable insights into current technological advancements and industry expectations. The opportunity for students to present their projects, exchange ideas, and interact with resource persons created a meaningful platform for practical learning, innovation, and professional development.

I sincerely appreciate the management, Principal, Head of the Department, organizing committee, faculty members, resource persons, and students of CEOA College of Arts and Science for their dedicated efforts in organizing this valuable academic event. I hope this conference inspires students to embrace technological innovations, enhance their knowledge, and contribute to the development of smart education and future career opportunities.

Thank you, and my best wishes for the grand success of the conference.

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## **INTER-DEPARTMENTAL ONLINE CONFERENCE**

### **Topic: “Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development”**

It is a privilege to express my views on the theme “Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development” at the Inter-Departmental Online Conference organized by the Department of Computer Science, CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026.

Artificial Intelligence and Machine Learning have become important technologies in modern education and professional development. They support innovative teaching practices, intelligent learning platforms, automated assessments, and personalized educational experiences. By incorporating these technologies into the learning process, students can improve their understanding, develop analytical thinking, and gain the technological knowledge needed to succeed in a rapidly changing digital environment.

AI and ML also play a significant role in shaping students' career paths. They help identify skill gaps, explore employment opportunities, understand industry trends, and make informed career choices. Developing practical knowledge of these technologies enables students to improve their problem-solving abilities, creativity, and adaptability, which are essential qualities for future professionals.

The conference served as a valuable platform for sharing knowledge, exploring technological innovations, and understanding the practical applications of emerging technologies. The expert sessions and interactive discussions encouraged students to connect theoretical concepts with real-world challenges. Such academic initiatives help strengthen industry–academia collaboration and motivate students to pursue innovation and lifelong learning.

I extend my sincere appreciation to the management, Principal, Head of the Department, organizing committee, faculty members, resource persons, and students of CEOA College of Arts and Science for their commitment and efforts in organizing this informative conference. I hope this programme will inspire students to utilize technological advancements responsibly, strengthen their professional skills, and achieve excellence in their academic and career journeys.

I wish the conference great success and hope that it creates lasting learning opportunities for all participants.

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# MESSAGE

It is a great honour to be part of the Inter-Departmental Online Conference on “**Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,**” organized by the Department of Computer Science at CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026.

Artificial Intelligence (AI) and Machine Learning (ML) are transforming various sectors, particularly healthcare and hospital administration. These emerging technologies play a vital role in improving hospital management systems, optimizing healthcare resources, supporting clinical decision-making, streamlining administrative operations, and enhancing the overall quality of patient care. Their applications in hospital administration offer new opportunities to improve efficiency, accuracy, and service delivery in healthcare institutions.

From the perspective of Hospital Management Administration, AI-driven technologies can assist in patient data management, appointment scheduling, resource allocation, hospital information systems, healthcare analytics, and the prediction of patient care requirements. Understanding these technological advancements is essential for students to develop the knowledge and professional competencies required to meet the evolving demands of the healthcare industry.

The conference provided an excellent platform for students to present their innovative ideas, explain their projects, exchange knowledge, and interact with distinguished resource persons and fellow participants. Such academic and professional interactions encourage critical thinking, creativity, communication, and problem-solving skills while helping students understand the practical applications of emerging technologies across different disciplines.

I sincerely appreciate the college management, Principal, Head of the Department, organizing committee, faculty members, distinguished resource persons, and participating students for their valuable contributions to organizing this meaningful academic event. I am confident that this conference will inspire students to explore innovative ideas, embrace technological advancements, and prepare themselves for successful careers in their respective fields.

I wish the conference great success and hope that its outcomes will contribute to academic excellence, interdisciplinary collaboration, and the effective integration of Artificial Intelligence and Machine Learning into education, healthcare, and professional development.

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# MESSAGE

It is a privilege to share my thoughts on the occasion of the Inter-Departmental Online Conference on “Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development,” organized by the Department of Computer Science, CEOA College of Arts and Science, Kariapatti, on 8th and 9th October 2026. This conference serves as a valuable platform for bringing together academic knowledge, technological innovation, and industry experience.

Artificial Intelligence and Machine Learning have emerged as powerful technologies that are reshaping the educational landscape and the professional world. Their applications in smart education offer promising possibilities for personalized learning, intelligent assessment, and improved academic support. By integrating these technologies into the learning process, educators can create engaging learning environments that encourage students to explore concepts, develop problem-solving abilities, and acquire knowledge more effectively.

In the context of career development, understanding emerging technologies has become increasingly important. Students must be prepared to adapt to changing industry requirements, strengthen their technical competencies, and develop the confidence to face real-world challenges. Conferences of this nature provide an excellent opportunity to understand current technological trends and explore the diverse career opportunities available in the digital era.

I would like to express my sincere appreciation to the distinguished resource persons, Mr. S. Siva from IBM India Pvt. Ltd., Bangalore; Mr. G. Vijay Dhanasekaran from Photon Interactive Pvt. Ltd., Chennai; Mr. Arun Surath Kumar K. from Ravenna Technology, Chennai; and Mr. T. Sharathkumar from Cognizant Technology Solutions, Coimbatore. Their valuable industry insights and professional experiences will undoubtedly enrich the knowledge and perspectives of our students.

I also congratulate the students for their enthusiastic participation and innovative project presentations. Their willingness to share ideas, engage in discussions, and learn from industry experts reflects the spirit of academic excellence. I encourage them to continue pursuing innovation, research, collaboration, and lifelong learning.

I sincerely appreciate the college management, Principal, Head of the Department, organizing committee, faculty members, resource persons, and students for their collective efforts in making this conference a meaningful academic initiative. May this conference inspire new ideas, strengthen industry-academia collaboration, and contribute to the advancement of smart education and career development.

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## **INTER-DEPARTMENTAL ONLINE CONFERENCE ON APPLICATIONS OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING CONCEPTS FOR SMART EDUCATION AND CAREER DEVELOPMENT**

It was a privilege to participate in the Inter-Departmental Online Conference on "Applications of Artificial Intelligence and Machine Learning Concepts for Smart Education and Career Development," conducted by the Department of Computer Science, CEOA College of Arts and Science, Kariapatti, on 8 and 9 October 2026. The event offered a valuable platform to explore the growing influence of artificial intelligence and machine learning in education, professional development, and the evolving technological landscape.

The sessions delivered by the eminent resource persons—Mr. S. Siva, IBM India Pvt. Ltd., Bangalore; Mr. G. Vijay Dhanasekaran, Photon Interactive Pvt. Ltd., Chennai; Mr. Arun Surath Kumar K., Ravenna Technology, Chennai; and Mr. T. Sharathkumar, Cognizant Technology Solutions, Coimbatore—were engaging and thought-provoking. Their perspectives on current industry practices, emerging innovations, and essential career competencies provided participants with practical knowledge beyond the classroom.

An especially rewarding aspect of the conference was the opportunity given to students to express their views, demonstrate their projects, and exchange ideas with experts and peers. Through these interactions, students strengthened their confidence, communication abilities, presentation techniques, and technical understanding. The constructive suggestions they received also encouraged them to refine their work and appreciate the connection between theoretical learning and real-world implementation.

I extend my heartfelt gratitude to the college management, Principal, Head of the Department, organizing committee, faculty members, distinguished resource persons, and all participating students for their dedicated efforts. Their collective contribution made the conference a productive, inspiring, and memorable academic experience.

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## List of Contributors

| <i>S. No</i> | <i>ID</i>       | <i>Title</i>                                                                                                                                                  | <i>Page No.</i> |
|--------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1.           | NAZIA – CS – 01 | An Intelligent Computer Vision – Based Food Recipe Management System for Automated Ingredient Identification and Recipe Generation<br><i>Ms. S. Gayathiri</i> | 1               |
| 2.           | NAZIA – CS – 02 | An Intelligent Digital Platform for Smart and Transparent College Complaint Management<br><i>Ms. K. Jansirani</i>                                             | 2               |
| 3.           | NAZIA – CS – 03 | AI – Powered Campus Placement and Intelligent Resume Analysis for Career Opportunity and Enhancement<br><i>Ms. R. Keerthiga</i>                               | 4               |
| 4.           | NAZIA – CS – 04 | A React Native Based Mobile Photo Gallery Application<br><i>Ms. B. Malathi</i>                                                                                | 5               |
| 5.           | NAZIA – CS – 05 | CREDORA – AI – Powered Digital Identity and Intelligent Certificate Verification System<br><i>Ms. A. Manimegalai</i>                                          | 6               |
| 6.           | NAZIA – CS – 06 | AI – Powered Sign Language Recognition for Real Time Gesture To – Text Communication<br><i>Ms. R. Muthammal</i>                                               | 8               |
| 7.           | NAZIA – CS – 07 | An AI – Powered Intelligent Platform for Automated News Verification and Misinformation Detection<br><i>Ms. T. Muthu Selvi</i>                                | 9               |

|     |                 |                                                                                                                                    |    |
|-----|-----------------|------------------------------------------------------------------------------------------------------------------------------------|----|
| 8.  | NAZIA – CS – 08 | AI – Based Automated Skin Disease Detection and Personalized Healthcare Recommendation System<br><i>Ms. B. Nandhini</i>            | 10 |
| 9.  | NAZIA – CS – 09 | Advanced Digital Photo Gallery and Image Storage Management Application<br><i>Mrs. C. Nivetha</i>                                  | 11 |
| 10. | NAZIA – CS – 10 | A Smart Machine Learning Framework for News Authenticity Detection and Misinformation Analysis<br><i>Ms. P. Periyakkal</i>         | 12 |
| 11. | NAZIA – CS – 11 | An Interactive Digital Assessment Platform for Online Quiz Based Student Evaluation<br><i>Ms. S. Rakku</i>                         | 13 |
| 12. | NAZIA – CS – 12 | AI – Driven Intelligent Skin Disease Detection and Early Health Care Recommendation System<br><i>Ms. S. Sangeetha</i>              | 14 |
| 13. | NAZIA – CS – 13 | Design and Implementation of An Interactive Online Quiz Platform for Student Performance Evaluation<br><i>Mrs. S. Saranya</i>      | 15 |
| 14. | NAZIA – CS – 15 | Design and Development of a Web – Based Employment Management System for Efficient Workforce Administration<br><i>Mr. P. Ajith</i> | 16 |
| 15. | NAZIA – CS – 16 | Intelligent Text & PDF Summarization Using Natural Language Processing (NLP)<br><i>Mr. A. Ananth</i>                               | 17 |
| 16. | NAZIA – CS – 17 | AI – Powered Summarization System for Structured Learning Content<br><i>Mr. N. Azhagu</i>                                          | 18 |

|     |                        |                                                                                                                                                          |    |
|-----|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 17. | <i>NAZIA – CS – 18</i> | An Intelligent System for Automated Skill Identification and Career Recommendation<br><i>Mr. K. Bharath Kumar</i>                                        | 19 |
| 18. | <i>NAZIA – CS – 19</i> | Smart Fashion E-Commerce Platform with Integrated Payment and Order Management<br><i>Boobesh C</i>                                                       | 20 |
| 19. | <i>NAZIA – CS – 20</i> | Facial Recognition Based Automated Attendance System<br><i>Chithiraiselvam M</i>                                                                         | 21 |
| 20. | <i>NAZIA – CS – 22</i> | Automated Classification of Real and AI – Generated Images Using Deep Learning<br><i>Mr. T. Kalaivanan</i>                                               | 22 |
| 21. | <i>NAZIA – CS – 23</i> | AI – Powered Resume Intelligence: An Automated Framework for Skill Extraction, Resume Evaluation, and Job Compatibility Analysis<br><i>Mr. R. Kannan</i> | 23 |
| 22. | <i>NAZIA – CS – 24</i> | Smart Employee Lifecycle Tracker: Enhancing Workplace Operational Efficiency<br><i>Mr. N. Madhan Yaswanth</i>                                            | 24 |
| 23. | <i>NAZIA – CS – 25</i> | Real Time Sales Tracking and Smart Inventory Control with Predictive Analysis<br><i>Mr. T. Manikanda Prabu</i>                                           | 25 |
| 24. | <i>NAZIA – CS – 26</i> | A Full – Stack Fashion E – Commerce Platform with Integrated Payment, Order Management and Customer Notification Services<br><i>Mr. M. Manoharan</i>     | 26 |
| 25. | <i>NAZIA – CS – 27</i> | Deep Learning – Based Detection of AI – Generated Images Using Res Net50<br><i>Mr. C. Manoj Kumar</i>                                                    | 27 |

|     |                         |                                                                                                                                                                        |    |
|-----|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 26. | <i>NAZIA – CS – 28</i>  | A Flask – Powered Digital Platform for Centralized Management of Students, Faculty, and Fee Records in Colleges<br><i>Mr. P. Meenatchi Sundaram</i>                    | 28 |
| 27. | <i>NAZIA – CS – 29</i>  | Next – Generation Cloud Architecture for Unified Stock Management & Predicatite Sales Analytics<br><i>Mr. K. Murugan</i>                                               | 29 |
| 28. | <i>NAZIA – CS – 30</i>  | Integrated Cloud Platform for Academic Automation<br><i>Mr. M. Muthu Murugan</i>                                                                                       | 30 |
| 29. | <i>NAZIA – CS – 31</i>  | Smart Attendance Management Using Face Detection and Recognition<br><i>Mr. S. Simbudevan</i>                                                                           | 31 |
| 30. | <i>NAZIA – BCA - 01</i> | AI – Driven Multimodal Framework for Real – Time Sign Language Recognition and Accessible Communication<br><i>Ms. B. Abarna</i>                                        | 32 |
| 31. | <i>NAZIA – BCA – 02</i> | Machine Learning Driven Career Guidance and Skill Gap Identification System<br><i>Ms. R. Divya Barathi</i>                                                             | 33 |
| 32. | <i>NAZIA – BCA – 03</i> | A Flutter – Based Mobile Application for Islamic Learning and Daily Religious Practices<br><i>Ms. N. Hamitha Nasrin</i>                                                | 34 |
| 33. | <i>NAZIA – BCA – 04</i> | An Intelligent AI – Based Agriculture Assistance System Using Deep Learning for Crop Disease Detection and Agricultural Recommendations<br><i>Ms. K. Jeya Kasthuri</i> | 35 |

|     |                         |                                                                                                                                                                                |    |
|-----|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 34. | <i>NAZIA – BCA - 05</i> | An Integrated Web Platform for Mehendi Design Recommendation and Artist Booking<br><i>Ms. K. Kohilavani</i>                                                                    | 36 |
| 35. | <i>NAZIA – BCA - 06</i> | An Integrated Approach to Business Data Analysis, Profit and Loss Evaluation, Performance Insights and Prediction<br><i>Ms. G. Rooba</i>                                       | 37 |
| 36. | <i>NAZIA – BCA - 07</i> | AI – Smart House Planner: An Intelligent Artificial Intelligence Based Web Application for Automated House Design<br><i>Mr. A. Feo</i>                                         | 38 |
| 37. | <i>NAZIA – BCA - 08</i> | DeskLink: An Android Application that Streams a Linux PC's Desktop to a Mobile Device in Real Time Over a Local Network<br><i>Mr. M. Ijas Ahamed</i>                           | 39 |
| 38. | <i>NAZIA – BCA - 09</i> | Design and Implementation of a Negotiation – Enabled E-Commerce Platform<br><i>Mr. M. Mukesh</i>                                                                               | 40 |
| 39. | <i>NAZIA – BCA - 10</i> | A Web – Based Digital Comic Reading and Interactive Story Telling Platform<br><i>Mr. K. Rohith Mohammed</i>                                                                    | 41 |
| 40. | <i>NAZIA – BCA - 11</i> | AI Second Brain: A Web – Based Intelligent Personal Knowledge Management System for Organizing, Retrieving and Managing Digital Information<br><i>Mr. T. R. Sathiya Seelan</i> | 42 |
| 41. | <i>NAZIA – BCA - 12</i> | DYSON AI: A Multimodal Agentic Architecture for Context – Aware Conversational Intelligence and Autonomous Web Task Execution<br><i>Mr. M. Siva</i>                            | 43 |

|     |                         |                                                                                                                                  |    |
|-----|-------------------------|----------------------------------------------------------------------------------------------------------------------------------|----|
| 42. | <i>NAZIA – BCA – 13</i> | CircuitStock: A web – Based Electronics Management and Sale System<br><i>Mr. M. Sudhan</i>                                       | 44 |
| 43. | <i>NAZIA – BCA – 14</i> | AI – Enabled Automated Vehicle Identification and Real – Time Entry – Exit Monitoring System<br><i>Mr. K. Vigneshwaran</i>       | 45 |
| 44. | <i>NAZIA – DS – 01</i>  | Intelligent Digital Campus: Leveraging Artificial Intelligence for Enhanced College Services<br><i>Ms. Josephine Jesintha. J</i> | 46 |
| 45. | <i>NAZIA – DS – 02</i>  | Building a Predictive HR Attrition Dashboard Using Power BI and DAX<br><i>Ms. Subatharadevi. T</i>                               | 47 |
| 46. | <i>NAZIA – DS – 03</i>  | Smart Educational Web Platform: Improving Accessibility and User Experience in College Services<br><i>Ms. Subiksha. K</i>        | 48 |
| 47. | <i>NAZIA – DS – 04</i>  | QR VAULT: Smart & Secure QR Attendance for Student Database System<br><i>Mr. Ganeesh Raj. R</i>                                  | 49 |
| 48. | <i>NAZIA – DS – 05</i>  | Smart Social Communication and Messaging Platform<br><i>Mr. Gopinanth. P</i>                                                     | 50 |
| 49. | <i>NAZIA – DS – 06</i>  | Zoya Services – All – in – One Citizen Services<br><i>Mr. Hariharan. B</i>                                                       | 51 |
| 50. | <i>NAZIA – DS – 07</i>  | Attendrio: Intelligent QR & Location – Based Attendance and Academic System<br><i>Mr. Nandhakumar. R</i>                         | 52 |

|     |                        |                                                                                                                                                    |    |
|-----|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 51. | <i>NAZIA – DS – 08</i> | NOVA AI Studio: An Intelligent PDF to Video Generation Platform for Automated Visual Storytelling and AI Narration<br><i>Mr. Pradeep Jeevan. M</i> | 53 |
| 52. | <i>NAZIA – DS – 09</i> | Smart Household Consultancy Management System<br><i>Mr. Praveen. J</i>                                                                             | 54 |
| 53. | <i>NAZIA – DS – 10</i> | Ucars - Car Sales Information System<br><i>Mr. Sanjay Ravivarma. K</i>                                                                             | 55 |
| 54. | <i>NAZIA – DS – 11</i> | SPARK AI Studio: Intelligent PDF to Video Transformation for Automated Multimedia Storytelling<br><i>Mr. Saravana Elangovan. T</i>                 | 56 |
| 55. | <i>NAZIA – DS – 12</i> | Home Service and Consultancy Management System<br><i>Mr. Suryaprakash. P</i>                                                                       | 57 |
| 56. | <i>NAZIA – DS – 13</i> | Second hand car sales prediction<br><i>Mr. Udhayanithesh. U</i>                                                                                    | 58 |
| 57. | <i>NAZIA – DS – 14</i> | Yogo – A Real-Time Chatting and Communication Application<br><i>Mr. Yogesh Kumar E</i>                                                             | 59 |

# An Intelligent Computer Vision – Based Food Recipe Management System for Automated Ingredient Identification and Recipe Generation

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## Abstract

Food-related digital applications are increasingly using artificial intelligence to assist users in identifying ingredients and obtaining relevant cooking information. This paper presents an Intelligent Computer Vision-Based Food Recipe Management System that analyzes food images to identify visible ingredients and generate suitable recipe information. The proposed system accepts a food image from the user and processes its visual features using computer vision and deep learning techniques. The recognized ingredients are then used as input for an automated recipe generation module. The system produces structured recipe information, including the recipe title, required ingredients, preparation instructions, and approximate cooking time. By connecting image-based ingredient recognition with recipe generation, the proposed approach reduces the need for users to manually identify ingredients before searching for recipes. The system also incorporates recipe management features that allow users to search for, save, and retrieve generated recipes for later use. The proposed framework is intended to provide a simple and accessible method for discovering recipes based on food images and available ingredients. It demonstrates how computer vision, deep learning, and artificial intelligence can be integrated into a practical food-information management application. The system can support users in exploring cooking options while reducing manual searching and information-entry requirements.

**Keywords:** *Artificial Intelligence (AI), Computer Vision, Deep Learning, Food Image Recognition, Ingredient Identification, Image Processing, Recipe Generation, Recipe Recommendation, Food Recognition, Automated Recipe Management, Image-Based Recipe Retrieval*

# An Intelligent Digital Platform for Smart and Transparent College Complaint Management

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## Abstract

Student Complaints are an Important Source of Information for Educational Institutions because they can reveal Academic, Infrastructure, Service, and Other Campus-related concerns. However, when complaints are handled through Paper-based Submissions, Informal Communication, or Disconnected Records, Students may have limited visibility into the progress of their requests, while administrators may face difficulties in maintaining organized complaint information. To address these Limitations, CampusConnect is proposed as a Web-Based Digital Platform designed to provide a structured and transparent approach to College Complaint Management. The proposed platform enables students to submit complaints by entering Relevant Details, Describing the Issue, and Attaching Supporting Evidence when required. An AI-assisted Feature further supports the submission process by analysing the information provided by the student and Suggesting an Appropriate Complaint Category, Issue Type, Priority, and Description. The Final Complaint is maintained as a structured Digital Record, enabling the information to be processed consistently throughout its Lifecycle. Once a complaint is submitted, it can progress through defined Administrative Stages. Students can monitor the current status of their complaints and Receive Notifications regarding important Updates, reducing the need for repeated Manual Enquiries. Administrators are provided with a centralized environment for reviewing complaints, examining submitted attachments, updating Complaint Status, and Recording Responses. The System also maintains relevant complaint information to improve the traceability of actions taken during the resolution process. By integrating complaint submission, AI – Assisted Guidance, Digital Tracking, Administrative Processing, and Notification-based Communication within a single platform, CampusConnect provides a systematic approach to managing student grievances. The proposed platform is intended to improve the

Accessibility, Visibility, and Organization of Complaint – related information while supporting more transparent communication between Students and College Authorities.

**Keywords:** *CampusConnect, College Complaint Management, Student Grievance, AI – Assisted System, Complaint Tracking, Digital Platform, Institutional Communication, Transparency, Accountability*

# AI – Powered Campus Placement and Intelligent Resume Analysis for Career Opportunities and Enhancement

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## Abstract

Campus recruitment requires coordination among students, companies, and placement administrators to manage student information, job vacancies, applications, and interviews. Handling these activities manually can make information management and recruitment coordination difficult. TalentTrack is a proposed AI-powered campus placement platform that brings these activities together in a centralized digital system. The platform includes student registration, resume analysis, job applications, vacancy management, application tracking, and interview coordination. Its resume analysis feature is designed to identify skills and qualifications from student resumes and organize this information in relation to available career opportunities. Email notifications are also incorporated to provide students with application confirmations and recruitment updates. By integrating these functions into a single platform, TalentTrack aims to support the management of campus recruitment activities, reduce manual coordination, and provide students and administrators with more organized access to placement-related information. The proposed system combines resume-based information analysis and digital placement administration to support campus recruitment and student career development.

**Keywords:** *TalentTrack, Artificial Intelligence, Campus Recruitment, Resume Analysis, Job Vacancy Management, Application Tracking, Interview Coordination, Email Notifications*

# A React Native Based Mobile Photo Gallery Application

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## Abstract

The rapid growth of mobile technology and digital media has been making it easier for users to capture, store, and view photos on mobile devices. However, managing a large collection of photos has been creating difficulties when images are not being organized properly. To address this issue, this project presents A React Native Based Mobile Photo Gallery Application, which has been being developed to provide a simple and user-friendly platform for viewing and organizing photos. The application has been using React Native for mobile application development and has been displaying photos in an organized grid layout. FlatList has been being used for efficiently rendering the photo collection and providing smooth scrolling. The application has been demonstrating important concepts such as React Native components, image handling, list rendering, styling, and mobile user-interface design. The proposed application has been providing a simple and attractive interface for users to navigate through their photo collection. Additional features such as photo search, categories, favorites, full-screen viewing, and sharing have been being considered for future enhancement. Overall, the application has been providing a practical approach to developing a modern mobile photo gallery using React Native.

**Keywords:** *React Native, Mobile Application, Photo Gallery, FlatList, Image Handling, User Interface, Mobile App Development*

# CREDORA – AI – Powered Digital Identity and Intelligent Certificate Verification System

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## Abstract

The growing adoption of digital credentials in academic and professional environments has created a need for reliable, efficient credential verification methods. Conventional certificate verification often involves manual inspection and communication between institutions, which can require significant time and effort. It may also be challenging to identify duplicated, modified, or potentially fraudulent documents when a large number of credentials are processed. To address these challenges, CREDORA is proposed as an AI-powered digital identity and intelligent certificate verification system for managing and validating digital credentials. CREDORA integrates three primary user portals: Student, Admin/College, and Company/HR. Through the Student Portal, users can create and maintain their digital identity profiles and submit certificates for verification. The system uses Optical Character Recognition (OCR) to extract relevant text from submitted documents. The system evaluates the extracted data using multiple verification mechanisms, including identity matching, certificate structure validation, duplicate detection, and AI-assisted analysis. Based on the combined verification results, the system classifies certificates as Verified, AI Review Required, or Suspicious. The Admin/College Portal provides authorized personnel with facilities to manage student records, review submitted certificates, examine extracted information, and handle verification decisions. The Company/HR Portal enables recruiters to search student profiles and verify digital credentials during recruitment. To ensure controlled access and secure data management, CREDORA incorporates role-based authentication and centralized database management. The proposed system aims to reduce the effort involved in conventional certificate verification while improving the accessibility, organization, and reliability of digital credentials. By integrating digital identity management, OCR-based information extraction, AI-assisted verification, and secure authentication within a unified

platform, CREDORA provides a practical approach to supporting academic credential management and recruitment-oriented verification.

**Keywords:** *Artificial Intelligence (AI), Digital Identity, Certificate Verification, Optical Character Recognition (OCR), Digital Credentials, Credential Authentication, Student Portal, Recruitment, Role-Based Authentication, Secure Credential Management*

# AI – Powered Sign Language Recognition for Real Time Gesture To – Text Communication

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## Abstract

The Sign language has been playing an important role in communication for people with hearing and speech difficulties. The AI-powered sign language recognition system has been developing a web-based platform for recognizing hand gestures and converting them into readable text. The system has been using a webcam to capture hand gestures and has been applying Media Pipe Hand Land marker to detect the hand and extract 21 landmark points. These landmark features have been being processed through a machine learning model, which has been recognizing predefined sign language gestures. The proposed system has been displaying recognized signs as text and has been helping users form meaningful sentences through continuous gesture recognition. It has been providing user authentication, live sign detection, text display, sentence formation, and history management features. Flask has been being used for backend development, while HTML, CSS, and JavaScript have been supporting the frontend interface. The system has been reducing the communication gap between sign language users and people who are not familiar with sign language. Through the integration of artificial intelligence, computer vision, and machine learning, project has been providing an accessible and user-friendly approach for real-time sign language communication.

**Keywords:** *Artificial Intelligence (AI), Sign Language Recognition, Hand Gesture Recognition, Media Pipe Machine Learning, Computer Vision, Hand Landmarks, Flask, Real-Time Detection, Gesture-to-Text Communication*

# An AI – Powered Intelligent Platform for Automated News Verification and Misinformation Detection

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## Abstract

The rapid growth of digital media, online news platforms, and social networking sites has made the spread of information faster and easier than ever before. However, the rapid circulation of false, misleading, and manipulated information has become a serious challenge for users and society. This project, titled “An AI-Powered Intelligent Platform for Automated News Verification and Misinformation Detection,” proposes an intelligent system to assist users in identifying potentially misleading news content. The platform uses Natural Language Processing (NLP) and Machine Learning techniques to analyze the textual content of a given news statement and classify it as REAL or FAKE. The system processes the input news, extracts meaningful textual features, and applies a trained machine learning model to generate a prediction. The proposed platform provides a simple and user-friendly interface that allows users to enter news content and receive an automated verification result. The system is designed to support faster information assessment and improve awareness about misinformation. By combining automated text analysis with machine learning, the proposed solution aims to provide an accessible approach for detecting potentially false news and promoting responsible consumption of digital information.

**Keywords:** *Artificial Intelligence, Machine Learning, Natural Language Processing, Fake News Detection, Misinformation Detection, News Verification, Text Classification*

# AI – Based Automated Skin Disease Detection and Personalized Healthcare Recommendation System

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## Abstract

Skin diseases have been remaining as one of the most common health issues affecting people worldwide. Early detection and proper treatment have been playing an important role in preventing serious complications. This project has been developing an AI-based automated system for detecting skin diseases and providing personalized healthcare recommendations. The system has been allowing users to upload images of affected skin areas through a user-friendly web interface. The system has been using image processing techniques and an AI-based classification approach to analyze the uploaded skin images and identify different types of skin diseases. Based on the predicted result, the system has been providing relevant disease information, symptoms, precautions, basic healthcare guidance, and lifestyle recommendations to the users. The proposed system has been being designed to support early detection and improve accessibility to basic skin health information, particularly for users who may have limited access to dermatological services. The web application has been being developed using Python Flask for application processing, along with HTML, CSS, and JavaScript for the user interface. The system has been focusing on providing a simple, efficient, and user-friendly approach for supporting early skin disease identification and healthcare awareness.

**Keywords:** Artificial Intelligence (AI), Skin Disease Detection, Image Processing, Healthcare Recommendation System, Medical Image Analysis, Early Detection, Personalized Healthcare, Web Application, Python Flask

## Advanced Digital Photo Gallery and Image Storage

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### Abstract

The Advanced Digital Photo Gallery and Image Storage Management Application is designed to provide a simple, organized, and user-friendly platform for storing, viewing, and managing digital photographs. The application helps users maintain their images in a structured manner and provides easy access to their personal photo collections. The proposed application allows users to add, view, organize, and manage digital images through a clean and interactive gallery interface. Users can browse their photographs easily, open images for detailed viewing, and access their required photos without unnecessary complexity. The organized layout helps reduce the difficulty of searching for images stored in an unstructured manner. The application focuses on providing convenient image storage and smooth photo viewing functionality. It is designed with simple navigation and an understandable interface so that users can manage their digital photographs efficiently. The system demonstrates the practical use of modern application development concepts for creating an effective digital gallery. Overall, the application provides a convenient solution for digital photo organization and image management. It improves the accessibility, organization, and viewing of photographs while providing users with a simple and efficient experience.

**Keywords:** *Digital Photo Gallery, Image Storage, Digital Photographs, Photo Organization, Image Management, Photo Viewing, Gallery Interface*

# A Smart Machine Learning Framework for News Authenticity Detection and Misinformation Analysis

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## Abstract

The rapid growth of digital media and social networking platforms has increased the spread of fake news and misinformation. Identifying the authenticity of online news has therefore become an important challenge. This project, titled “A Smart Machine Learning Framework for News Authenticity Detection and Misinformation Analysis,” proposes a machine learning-based system to automatically classify news articles as authentic or fake. The proposed framework uses Natural Language Processing (NLP) techniques to preprocess and analyze the textual content of news articles. Relevant features are extracted from the processed data and provided to machine learning algorithms for classification. The system is trained using a labeled dataset containing genuine and fake news articles. Based on the learned patterns, the framework predicts the authenticity of new or unseen news content. The system aims to provide fast and reliable detection of misinformation and reduce the impact of false information on users. The proposed approach can also be extended using advanced machine learning and deep learning techniques to improve classification performance and adaptability to emerging forms of misinformation.

**Keywords:** *Machine Learning, Fake News Detection, Misinformation, News Authenticity, Natural Language Processing, Text Classification, Artificial Intelligence, Feature Extraction*

# An Interactive Digital Assessment Platform for Online Quiz Based Student Evaluation

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## Abstract

An Interactive Digital Assessment Platform for Online Quiz-Based Student Evaluation is a web-based system designed to provide an efficient, interactive, and automated approach to student assessment. The platform enables students to register, log in, participate in subject-based online quizzes, and receive their results instantly after completing an assessment. The system automatically evaluates answers and records students' scores, reducing the time, effort, and errors associated with traditional manual evaluation. The platform also provides performance tracking and maintains quiz history, allowing students to monitor their learning progress. Administrators can manage users, create and organize quiz questions, conduct assessments, and monitor student results. The proposed system integrates a user-friendly interface with database support to provide secure and organized management of assessment information. This digital approach can be effectively used in schools, colleges, coaching centres, and other educational institutions to support continuous assessment and digital learning.

**Keywords:** *Online Quiz, Digital Assessment, Student Evaluation. Web-Based Application, and Learning Assessment*

# AI – Driven Intelligent Skin Disease Detection and Early Health Care Recommendation System

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## Abstract

Skin diseases have become one of the common health concerns affecting people worldwide, and early identification has become important for providing timely healthcare support. This project has developed an AI-driven intelligent system for skin disease detection and early healthcare recommendation. The system has provided a user-friendly web interface through which users have been able to upload images of affected skin areas for analysis. The developed system utilizes image processing and AI-based classification techniques to examine uploaded skin images and predict the possible skin disease. Based on the prediction, it provides users with useful information about the identified condition, including its symptoms, preventive measures, and general healthcare guidance. In addition, the system includes a prediction history feature that allows users to view and track their previous skin disease prediction results. The web application has been developed using Python Flask for application processing and HTML, CSS, and JavaScript for the user interface. User authentication, image upload and preprocessing, AI-based prediction, disease information and recommendation, prediction history, and administrative management features have been incorporated into the system. The proposed system has improved accessibility to basic skin health information and has provided an efficient and user-friendly approach for supporting early skin disease identification. The system has been developed as a supportive healthcare tool and has not been intended to replace professional medical diagnosis.

**Keywords:** *Artificial Intelligence (AI), Skin Disease Detection, Image Processing, AI-Based Classification, Healthcare Recommendation System, Medical Image Analysis, Early Detection, Prediction History, Python Flask, Web Application*

# Design and Implementation of An Interactive Online Quiz Platform for Student Performance Evaluation

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## Abstract

The rapid growth of digital learning has created a need for effective and interactive methods of assessing student knowledge and academic performance. This research presents the design and implementation of an Interactive Online Quiz Platform for Student Performance Evaluation, developed to provide a simple, efficient, and user-friendly environment for conducting online assessments. The proposed platform enables students to participate in quizzes through a web-based interface and receive immediate feedback on their performance. The system is designed with essential features such as student registration and login, quiz participation, multiple-choice questions, automatic answer evaluation, score calculation, and result display. It also provides an organized mechanism for managing quiz questions and evaluating student performance. By automating the assessment process, the platform reduces manual evaluation efforts, minimizes calculation errors, and saves time for both students and educators. The proposed system can support continuous learning by allowing students to identify their strengths and areas that require improvement through their quiz results. The interactive nature of the platform also encourages student engagement and provides a convenient assessment experience that can be accessed through digital devices. Overall, the system demonstrates how web-based technologies can be applied to develop an accessible and efficient solution for student performance evaluation in modern educational environments.

**Keywords:** *Online Quiz, Student Performance Evaluation, Web-Based Assessment, Interactive Learning, Automated Evaluation, Digital Education*

# Design and Development of a Web – Based Employment Management System for Efficient Workforce Administration

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## Abstract

The study had presented the design and development of a web-based Employment Management System that had been developed to improve the efficiency, accuracy, and organization of workforce administration. The proposed system had been designed to address common challenges associated with manual employment management, including inefficient employee record maintenance, difficulty in tracking job roles, limited accessibility of employment information, and time-consuming administrative processes. The system had integrated essential functionalities such as employee registration and management, department and job-role administration, employee search, salary information management, and department-wise reporting. A centralized database had been implemented to ensure that employee-related information had been stored systematically and retrieved efficiently. The web-based architecture had provided authorized users with convenient access to employment records through an interactive and user-friendly interface. The development process had focused on improving data consistency, reducing administrative workload, minimizing errors, and supporting faster workforce-related decision-making. The developed system had demonstrated how web-based technologies could be utilized to automate employment administration and improve organizational efficiency. The study had concluded that the proposed Employment Management System had provided a structured and scalable approach to workforce administration and had offered a foundation for future enhancements such as automated recruitment, attendance monitoring, performance evaluation, and data-driven workforce analytics.

**Keywords:** *Employment Management System, Workforce Administration, Web-Based System, Employee Management, Database Management, Human Resource Management, Workforce Automation*

# Intelligent Text & PDF Summarization using Natural Language Processing (NLP)

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## Abstract

The AI Note Summarizer is a web-based application designed to help students and other users quickly comprehend lengthy study materials and documents. The system allows users to upload PDF files or enter text directly, extracts the content, and applies Natural Language Processing (NLP) techniques to identify key information and generate concise, meaningful summaries. The application is built using HTML, CSS, and JavaScript for the frontend, Python Flask for the backend, and NLP for text processing and summarization. By significantly reducing the time required to read large volumes of information while preserving the essential points of the original content, the system improves the efficiency of studying and information review. It also provides an organized interface for viewing and managing generated summaries for future reference. Overall, the project offers a simple, efficient, and user-friendly solution for converting lengthy notes into clear and easily understandable summaries.

**Keywords:** *Artificial Intelligence, Natural Language Processing, Text Summarization, PDF Processing, Note Summarization, Python Flask, Web Application, Text Extraction, Document Processing*

# AI – Powered Summarization System for Structured Learning

## Content

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## Abstract

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**Keywords:** *Artificial Intelligence, Natural Language Processing, Text Summarization, PDF Processing, Note Summarization, Python Flask, Web Application, Text Extraction, Document Processing*

# An Intelligent System for Automated Skill Identification and Career Recommendation

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## Abstract

The increasing use of digital recruitment platforms has created a need for automated approaches that can process and interpret candidate resumes efficiently. Manual resume screening requires considerable time and effort, particularly when large numbers of applications must be evaluated against specific job requirements. This project presents an AI-powered skill mapping and career guidance system developed to automate resume processing, information extraction, skill identification, and career recommendation. The proposed system applies Artificial Intelligence (AI), Natural Language Processing (NLP), Machine Learning, and text-processing techniques to transform unstructured resume information into structured and meaningful data. The system identifies relevant candidate information, including educational qualifications, technical skills, professional experience, certifications, and other competencies. The extracted information is organized to support systematic analysis of candidate profiles. Furthermore, the system compares identified skills with predefined job requirements to determine relevant skill matches and potential career paths. Based on the analysis, the system generates personalized career recommendations to help candidates identify suitable career options where their skills align with market demand. This approach reduces the dependence on completely manual resume screening and provides a consistent framework for evaluating candidate information.

**Keywords:** *Artificial Intelligence (AI), Natural Language Processing (NLP), Machine Learning, Resume Analysis, Resume Screening, Skill Extraction, Information Extraction, Candidate Profiling, Qualification Analysis, Skill Matching, Skill Gap Analysis, Career Recommendation, Automated Recruitment, Text Processing, Data-Driven Recruitment*

# Smart Fashion E – Commerce Platform with Integrated Payment and Order Management

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## Abstract

FashionKart is a web-based full-stack e-commerce application developed to provide a convenient digital platform for purchasing women's fashion products. The system integrates product browsing, shopping cart management, secure payment processing, order monitoring, and customer communication within a unified application. The user interface is developed using HTML, CSS, JavaScript, and Bootstrap, while Node.js and Express are used to implement the server-side functionality. The platform enables customers to explore products based on categories, view individual product information, manage their cart and wishlist, apply applicable discount coupons, create accounts, and complete orders by providing delivery information. Online payments are integrated through the Razorpay payment gateway, supporting UPI, card, and net-banking transactions with payment-signature verification. Customers can also choose Cash on Delivery as an alternative payment method. Each successfully created order is assigned a unique identification number, and its progress can be monitored through different order-status stages. To improve post-purchase communication, FashionKart provides automated order-confirmation emails and company alerts, along with SMS and WhatsApp notification support. The system also includes an administrative dashboard through which authorized users can search and manage orders, modify order statuses, allocate courier and tracking information, resend notification emails, and export order records in CSV format. By integrating shopping, payment processing, order administration, and customer notifications into a single system, FashionKart provides a structured and user-friendly approach to online fashion retail.

**Keywords:** *E-Commerce, Full-Stack Development, Fashion Retail, Node.js, Express.js, Razorpay, Payment Gateway, Order Management, Customer Notifications, Admin Dashboard*

# Facial Recognition Based Automated Attendance System

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## Abstract

The Facial Recognition Based Automated Attendance System is a smart and automated solution developed to simplify and improve the attendance management process in educational institutions. Traditional attendance methods, such as manual roll calls and paper-based records, require significant time and effort and may lead to errors, duplicate entries, or inaccurate attendance records. The proposed system addresses these limitations by using facial recognition technology to automatically identify students and record their attendance. In this system, a camera captures the facial image of a student, and the system detects and extracts important facial features. These features are compared with the registered facial data stored in the system database. When a valid match is identified, the student's attendance is automatically marked along with the corresponding date and time. The system can maintain student details, attendance records, attendance percentages, and daily attendance reports in a centralized database. The system also provides an easy-to-use interface for administrators and faculty members to monitor attendance and manage student information. Attendance data can be viewed, updated, and generated as reports whenever required. Additional features such as student notifications, parent alerts, and attendance status can help improve communication between the institution, students, and parents. The proposed system reduces the need for manual attendance recording and minimizes human errors while saving time during attendance sessions. It provides a contactless, efficient, and convenient method for maintaining attendance records. Overall, the Facial Recognition Based Automated Attendance System demonstrates how facial recognition and database technologies can be integrated to create a reliable and automated attendance management solution for modern educational institutions.

**Keywords:** *Facial Recognition, Automated Attendance, Face Detection, Face Recognition, Student Attendance, Database Management, Automation, Educational Institution*

# Automated Classification of Real and AI – Generated Images using Deep Learning

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## Abstract

Advances in generative artificial intelligence have made synthetic images increasingly realistic, making it harder for viewers to tell genuine photographs apart from machine-generated ones. This raises concerns for journalism, social media and digital forensics, where verifying image origin matters. To address this, the project develops "AI Image Detector," a full-stack web application that predicts whether an uploaded image is REAL or AI-generated (FAKE). The interface is built with React and Vite, allowing users to upload an image and view results instantly, while a FastAPI backend handles request routing, file validation and communication with the detection model. At the core of the system is a ResNet50 convolutional neural network built with PyTorch, chosen for its strong performance on image classification tasks. Before inference, each image is converted to RGB, resized to  $224 \times 224$  pixels, and normalized using standard ImageNet statistics, ensuring the input matches the format the model was trained on. The classifier outputs FAKE and REAL probabilities via a softmax layer, and the higher value determines the final prediction. The deployed model, version V19, was obtained by retraining an earlier checkpoint on a refined, balanced dataset that added images the previous version had misclassified, which improved its accuracy on genuine photographs. Tested on 663 images never seen during training, the system reached 92.76% overall accuracy and 90.06% balanced accuracy, correctly identifying 94.41% of FAKE images and 85.71% of REAL images. Results are presented with confidence scores, class probabilities and image metadata, along with a clear disclaimer that the prediction is a statistical estimate rather than definitive proof of authenticity.

**Keywords:** Artificial Intelligence, AI-Generated Images, Deep Learning, ResNet50, Image Classification, Computer Vision, Image Detection

# AI – Powered Resume Intelligence an Automated Framework for Skill Extraction Resume Evaluation and Job Compatibility Analysis

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## Abstract

The increasing use of digital recruitment platforms has created a need for automated approaches that can process and interpret candidate resumes efficiently. Manual resume screening requires considerable time and effort, particularly when large numbers of applications must be evaluated against specific job requirements. This project presents an AI-powered skill mapping and career guidance system developed to automate resume processing, information extraction, skill identification, and career recommendation. The proposed system applies Artificial Intelligence (AI), Natural Language Processing (NLP), Machine Learning, and text-processing techniques to transform unstructured resume information into structured and meaningful data. The system identifies relevant candidate information, including educational qualifications, technical skills, professional experience, certifications, and other competencies. The extracted information is organized to support systematic analysis of candidate profiles. Furthermore, the system compares identified skills with predefined job requirements to determine relevant skill matches and potential career paths. Based on the analysis, the system generates personalized career recommendations to help candidates identify suitable career options where their skills align with market demand. This approach reduces the dependence on completely manual resume screening and provides a consistent framework for evaluating candidate information.

**Keywords:** *Artificial Intelligence (AI), Natural Language Processing (NLP), Machine Learning, Resume Analysis, Resume Screening, Skill Extraction, Information Extraction, Candidate Profiling, Qualification Analysis, Skill Matching, Skill Gap Analysis, Career Recommendation, Automated Recruitment, Text Processing, Data-Driven Recruitment*

# Smart Employee Lifecycle Tracker: Enhancing Workplace Operational Efficiency

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## Abstract

The Smart Employee Lifecycle Tracker is a web-based management system designed to improve workplace efficiency by centralizing personnel data and administrative workflows. It addresses common problems in traditional HR practice, such as manual recordkeeping, data redundancy, and fragmented tracking. The platform brings registration, profile management, department allocation, attendance monitoring, and payroll processing together in a single interface. By replacing manual tasks with automated workflows, the system improves data accuracy, simplifies access to information, and supports real-time workforce monitoring from recruitment through offboarding. As a result, it reduces data-entry errors, speeds up decision-making, and strengthens overall operational productivity. Department-wise employee information and relevant reports had been generated through the system, which had supported administrators in monitoring workforce details and carrying out routine organizational activities more effectively.

**Keywords:** *Employee Lifecycle Management, Workforce Management, Web-Based System, Operational Efficiency, Employee Records, Human Resource Management*

# Real Time Sales Tracking and Smart Inventory Control with Predictive Analytics

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## Abstract

Small and medium retail businesses often depend on manual record keeping, which leads to billing mistakes, stock mismatches and delayed reports. This project is a web-based Sales and Inventory Management System built with Python Flask, SQLite, HTML, CSS, JavaScript and Chart.js. It has two separate portals, one for Admin and one for Staff, with role-based access control. The Point of Sale (POS) module lets cashiers search products by name, SKU or barcode. It supports discounts, tax, multiple payment methods (cash, UPI, cards, bank transfer, credit/pay later) and printable invoices. Every sale or return updates stock automatically and is logged in a stock history for audit. The Admin manages products, suppliers, customers, purchases and staff accounts. The Admin also gets sales and profit reports with charts and CSV export. The system reduces manual work, prevents overselling and helps the owner make better business decisions. Credit sales are tracked with the balance due and due date, so the shop owner can follow pending payments easily. A product returns module records the reason for each return and can restore stock automatically. The Admin can add staff accounts, activate or deactivate them, reset passwords and view each cashier's sales performance. Dashboards give a quick view of sales, stock and profit. Monthly revenue and profit trends are shown as charts. The responsive interface works on desktop and mobile screens. The lightweight SQLite database makes the system simple to install and run on a normal computer

**Keywords:** Sales Management, Inventory Management, Point of Sale (POS), Flask, Python, SQLite, Role-Based Access Control, Stock Tracking, Billing System, Sales and Profit Reports, Retail Management, Chart.js

## A Full – Stack Fashion E – Commerce Platform with Integrated Payment, Order Management and Customer Notification Services

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### Abstract

FashionKart is a web-based full-stack e-commerce application developed to provide a convenient digital platform for purchasing women's fashion products. The system combines product browsing, shopping-cart management, secure payment processing, order monitoring, and customer communication within a unified application. The user interface is developed using HTML, CSS, JavaScript, and Bootstrap, while Node.js and Express are used to implement the server-side functionality. The platform enables customers to explore products according to categories, examine individual product information, maintain a cart and wishlist, use applicable discount coupons, create accounts, and complete orders by providing delivery information. Online payments are integrated through the Razorpay payment gateway, supporting UPI, card, and net-banking transactions with payment-signature verification. Customers can also select Cash on Delivery as an alternative payment method. Each successfully created order is assigned a unique identification number and its progress can be monitored through different order-status stages. To improve communication after purchase, FashionKart provides automated order-confirmation emails and company alerts, along with SMS and WhatsApp notification support. The system also includes an administrative dashboard through which authorized users can search and manage orders, modify order statuses, allocate courier and tracking information, resend notification emails, and export order records in CSV format. By integrating shopping, payment processing, order administration, and customer notifications into one system, FashionKart provides a structured and user-friendly approach to online fashion retail.

**Keywords:** *E-Commerce, Full-Stack Development, Fashion Retail, Node.js, Express.js, Razorpay, Payment Gateway, Order Management, Customer Notifications, Admin Dashboard*

# Deep Learning – Based Detection of AI – Generated Images Using ResNet50

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## Abstract

The rapid growth of Generative Artificial Intelligence has made it difficult to distinguish real photographs from AI-generated images, raising concerns about misinformation and misuse. This project presents "AI Image Detector," a web-based deep learning system that analyzes an uploaded image and classifies it as REAL or FAKE (AI-generated). The system follows a client-server architecture, with a React and Vite frontend for image upload and result display, and a FastAPI backend that handles image processing and model inference. The core detection model is a ResNet50 convolutional neural network, implemented in PyTorch and trained for binary image classification. An uploaded image is validated for file type, converted to RGB, resized to  $224 \times 224$  pixels, and normalized using ImageNet statistics before being passed to the model, which outputs FAKE and REAL probabilities through a softmax layer. The final model, version V19, was developed by retraining an earlier version on a balanced dataset that included additional hard-to-classify REAL images, improving its ability to recognize genuine photographs. On an independent evaluation set of 663 images kept separate from training, the V19 model achieved an overall accuracy of 92.76% and a balanced accuracy of 90.06%, with a FAKE-class recall of 94.41% and a REAL-class recall of 85.71%. The application returns the predicted label, confidence score, class probabilities, and basic image information through a responsive web interface. While the system demonstrates the practical use of deep learning and computer vision for detecting AI-generated imagery, its output remains a probabilistic estimate and is not a forensic authenticity certificate.

**Keywords:** *Artificial Intelligence, AI-Generated Images, Deep Learning, ResNet50, Image Classification, Computer Vision, Image Detection*

# A Flask – Powered Digital Platform for Centralized Management of Student, Faculty and Fee Records in Colleges

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## Abstract

Educational institutions handle large amounts of academic, financial, and administrative data, and managing it manually is slow and error-prone. This project presents a web-based College Enterprise Resource Planning (ERP) system that brings these activities into one platform. The system is developed using Python Flask, SQL Alchemy ORM, and an SQLite database, with a responsive Bootstrap interface. It provides role-based portals for Administrators, Faculty, and Students, supported by secure login, password hashing, and CSRF protection. The main modules cover department, course, and subject records, attendance, fee collection with printable receipts, examination marks and results, library issue and return with fine calculation, and timetable scheduling with conflict detection. The system also generates attendance, fee, result, and staff reports with CSV export. The accounts module records campus expenses, tracks pending dues with payment status, and provides financial summaries, while the examination module supports hall ticket generation, grade calculation, and CGPA computation with controlled publication of results. Faculty can mark attendance, apply for leave, and view salary statements, and administrators can approve leave requests and monitor institution-wide statistics through interactive dashboards. Students are alerted when attendance falls below the 75% eligibility limit, and library books can be tagged with QR codes for quick identification. The application follows a modular blueprint architecture and is verified through automated unit tests. It reduces paperwork, improves accuracy, and gives students and staff easy access to their academic information.

**Keywords:** ERP System, College Automation, Flask, SQL Alchemy, Role-Based Access, Web Application, Academic Records

## Next – Generation Cloud Architecture for Unified Stock Management & Predicative Sales Analytics

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### Abstract

Small and medium retail businesses often rely on manual record keeping, which results in billing errors, stock mismatches and delayed reports. This project presents a web-based Sales and Inventory Management System developed using Python Flask, SQLite, HTML, CSS, JavaScript and Chart.js. The system provides separate portals for Admin and Staff with role-based access control to ensure secure operation. The Point of Sale (POS) module allows cashiers to search products by name, SKU or barcode and generate bills quickly. It supports item-wise and bill-wise discounts, tax calculation, multiple payment methods (cash, UPI, cards, bank transfer and credit/pay later) and printable invoices. Credit sales are tracked with balance due and due dates. Every sale or return automatically updates the stock, and all changes are recorded in a stock history for audit. The returns module stores the reason for each return and can restore stock when required. The Admin manages products, suppliers, customers, purchases and staff accounts, including activating or deactivating staff and resetting passwords. Dashboards, monthly revenue and profit charts, cashier performance details and CSV export help the owner analyse business performance. The responsive interface works on desktop and mobile screens, and the lightweight SQLite database makes the system easy to install and run. Overall, the system reduces manual work, prevents overselling, improves accuracy and supports better business decisions.

**Keywords:** *Sales Management, Inventory Management, Point of Sale (POS), Python Flask, SQLite, Role-Based Access Control, Stock Tracking, Billing System, Sales and Profit Reports, Retail Management*

## Integrated Cloud Platform for Academic & Admin Automation

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### Abstract

This project presents an Integrated Cloud Platform for Academic and Admin Automation, a web-based College Enterprise Resource Planning (ERP) system that brings these activities into one centralized application. The system is developed using Python Flask with a modular blueprint design, SQL Alchemy ORM and an SQLite database of nineteen related tables, and its responsive interface uses Bootstrap and Chart.js. Role-based portals are provided for Administrators, Faculty and Students, protected by secure login, password hashing and CSRF protection. Educational institutions handle large volumes of academic, financial and administrative data, and managing it through manual registers is slow and error prone. The main modules cover department, course and subject management, student and staff attendance with a 75% eligibility alert, fee collection with printable receipts and due lists, examination marks with automatic grade and CGPA calculation, hall tickets and result publication, and library issue and return with automatic fine calculation and QR code labels. A timetable module supports manual and automatic scheduling with faculty and room conflict detection. Attendance, fee, result and staff reports can be exported as CSV files, and an automated test suite verifies the key workflows. Being browser based, the platform is accessible from any device and suitable for cloud hosting. It reduces paperwork, improves accuracy and gives students and staff easy access to academic information.

**Keywords:** *ERP System, College Automation, Flask, SQL Alchemy, Role-Based Access, Web Application, Academic Records*

# Smart Attendance Management using Face Detection and Recognition

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## Abstract

Maintaining reliable student attendance records is an important part of academic administration. Traditional attendance procedures generally depend on manual identification and data entry, which can take considerable classroom time and introduce inaccuracies in record maintenance. This paper presents a Smart Attendance Management System that applies face detection and face recognition to automate the attendance process. In the proposed approach, facial information of registered students is stored in the system during the enrollment stage. When attendance is conducted, a camera captures the students present in the classroom and the system analyzes their facial characteristics against the registered information. After a student's identity is successfully matched, the corresponding attendance entry is generated automatically with the date and time. This reduces repetitive manual operations and provides a systematic method for maintaining attendance information. The system also supports student registration, facial-data management, attendance recording, and digital access to attendance records for authorized users. By combining facial identification with automated record management, the proposed solution provides a faster and more convenient approach to routine attendance monitoring. The system demonstrates how computer vision-based technologies can be applied to improve the organization and automation of student attendance management in educational institutions.

**Keywords:** *Smart Attendance System, Face Detection, Face Recognition, Computer Vision, Automated Attendance, Student Monitoring, Digital Attendance, Attendance Management*

# AI – Driven Multimodal Framework for Real – TimeSign Language Recognition and Accessible Communication

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## Abstract

People with hearing and speech impairments often face barriers to communicating with the wider community, which limits their access to education, social participation, and digital services. Conventional interpretation methods are constrained by cost, availability, and delayed response. This paper presents an AI-driven multimodal framework for real-time, two-way communication between sign language users and non-signers. Using a standard camera, the system extracts hand landmarks with MediaPipe and recognizes signs by analyzing their spatial and temporal patterns. Recognized signs are converted into text and synthesized speech, while spoken input is transcribed and conveyed through corresponding signs. A conversational AI module provides context-aware assistance during interaction, and a communication-history feature allows users to review previous conversations. The framework also supports personalized sign creation, enabling users to define and use customized signs. By integrating recognition, speech synthesis, and conversational assistance on commodity hardware, the proposed framework offers an accessible, extensible, and user-centered approach to more inclusive everyday communication for people with hearing and speech impairments.

**Keywords:** *Sign Language Recognition, Artificial Intelligence, Computer Vision, MediaPipe, Hand Landmark Detection, Speech Processing, Natural Language Processing, Multimodal Communication, Multilingual Communication, Flutter, Assistive Technology*

# Machine Learning Driven Career Guidance and Skill Gap Identification System

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## Abstract

Selecting the right career is difficult for students, since the number of options is large and each student differs in academic record, skills, interests, and goals. Conventional counselling gives only broad advice and rarely pinpoints what an individual student lacks. To address this, we present a machine learning based career guidance and skill gap identification system that delivers personalized career suggestions and learning direction. The system gathers a student's marks, technical skills, interests, strengths, and preferred career domains, and a machine learning model processes this data to predict the most suitable career paths. It then compares the student's current skills against the skills demanded by the recommended role to find the gaps, and builds a personalized learning roadmap with relevant skills and study resources for closing them. The system is built as an easy-to-use web application with Python and Flask, backed by a database for student records and trained models for prediction and recommendation. It helps students recognize their strengths, discover fitting careers, see where they need to improve, and plan their learning more effectively in a single platform. Future work includes stronger recommendation models, a career chatbot, job market information, and richer personalized learning content.

**Keywords:** *Machine Learning, Artificial Intelligence, Career Guidance, Career Recommendation, Skill Gap Analysis, Personalized Learning, Student Career Planning*

# A Flutter – Based Mobile Application for Islamic Learning and Daily Religious Practices

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## Abstract

Reliable Islamic learning resources on mobile devices are often scattered across several separate applications and websites. This paper presents a user-friendly mobile application that consolidates learning materials and everyday religious tools in one place. It offers Quran reading, prayer guidance, duas, a digital Tasbeeh, Arabic learning, a Qibla Finder, a Hijri Calendar, the 99 Names of Allah, a Nearby Mosque locator, a Name Translator, and an Islamic library. The interface is organized simply so that beginners and general users can locate each resource with minimal effort. The project is implemented using Flutter and Dart, and combines locally stored content with selected external links. By bringing these resources together on a single platform, the application provides convenient, anytime access to Islamic knowledge and supports the practice of essential religious activities.

**Keywords:** *Islamic Learning; Quran; Prayer; Dua; Flutter; Mobile Application; Islamic Resources*

# An Intelligent AI – Based Agriculture Assistance System Using Deep Learning for Crop Disease Detection and Agricultural Recommendations

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## Abstract

Late identification of crop diseases remains a major cause of yield loss for smallholder farmers, who often depend on manual inspection and delayed expert advice. Such methods are time-consuming, subjective, and not always readily available to farmers, which allows diseases to spread before treatment begins. This paper presents a web-based intelligent assistance system that detects crop diseases from leaf images using deep learning and computer vision. A user uploads a photograph of an affected leaf, and a trained deep learning model identifies the possible disease and returns its symptoms, causes, preventive measures, and recommended treatment. Beyond diagnosis, the system integrates weather information, fertilizer guidance, and crop recommendations within a single interface, so that farmers can obtain diagnostic and advisory support in one place instead of consulting multiple sources. The interface is designed to be simple and easy to use, even for users with limited technical knowledge. By combining these services, the proposed system reduces reliance on manual observation, shortens the time between symptom appearance and corrective action, and supports informed, data-driven farming decisions. It shows how artificial intelligence can make agricultural expertise more accessible, and it can be extended to additional crops, languages, and regions

**Keywords:** *Artificial Intelligence, Smart Agriculture, Crop Disease Detection, Deep Learning, Computer Vision, Farmer Assistance*

# An Integrated Web Platform for Mehandi Design Recommendation and Artist Booking

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## Abstract

Mehandi holds significant cultural value in Indian celebrations, including weddings, festivals, and family functions. However, finding suitable designs and booking a skilled artist within a limited budget can be challenging and time-consuming, as users often rely on information scattered across social media platforms. This paper presents a web-based platform that centralizes Mehandi design exploration and artist booking in a single place. The platform offers organized filters by occasion, personal preference, and budget, helping users quickly shortlist suitable designs. It also offers a user-friendly booking process that connects clients directly with a network of registered Mehandi artists. By reducing the time and effort required to select a design and book an artist, the platform aims to improve the overall user experience. This paper presents the web design of the platform, its key features, and its potential to make Mehandi services more accessible, organized, and convenient through digital technology.

**Keywords:** *Mehandi, Henna, Artist Booking, Web Platform, Digital Services, User Experience, Digital Service*

# An Integrated Approach to Business Data Analysis, Profit and Loss Evaluation, Performance Insights and Prediction

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## Abstract

Small and emerging enterprises frequently find it difficult to merge their scattered sales, expenditure, product, and accounting records into one coherent picture of business health. This work introduces an integrated analytics platform that turns everyday transaction data into actionable insights on profitability and performance. The platform provides a central dashboard that displays overall revenue, total spending, net profit or loss, profit margin, and emerging trends using summary indicators and graphical charts. Separate modules for sales, expenses, and products record item-level sales, expenditure by category, and inventory information, including pricing and stock levels. Analytical routines operate on the stored records to calculate profit, average values, and major trends, and a forecasting module projects upcoming sales and expenses to signal probable future profit or loss. In addition, a reporting component compiles structured reports that merge the raw records with the calculated outcomes. By bringing data handling, financial analysis, forecasting, visualization, and reporting together on a single platform, the proposed solution minimizes repetitive manual computation, makes business data easier to interpret, and supports better-informed managerial decisions.

**Keywords:** *Business Analytics; Profit and Loss Analysis; Sales and Expense Analysis; Performance Evaluation; Predictive Insights; Data Visualization*

## AI – Smart House Planner: An Intelligent Artificial Intelligence – Based Web Application for Automated House Design

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### Abstract

House planning had required careful decisions regarding room arrangements, construction costs, and interior design. To simplify this process, the AI-Smart House Planner had been developed as an intelligent web-based application using Python, Flask, SQLite, HTML, CSS, and JavaScript. The system had helped users plan their houses according to their requirements, available space, and budget. The application had allowed users to enter plot dimensions, number of floors, bedrooms, bathrooms, budget, house style, and plot facing. Based on these details, the system had generated suitable house layout suggestions and had estimated approximate construction costs. It had also provided interior design recommendations, including colour combinations and furniture arrangements based on the selected house style. An AI copilot had assisted users in describing their requirements and exploring different planning ideas. The system had stored user details, house plans, cost estimates, and recommendations in an SQLite database for future reference. It had simplified preliminary house planning by combining design suggestions and budget estimation in a single platform. This had helped users compare planning options, understand expected expenses, and make informed decisions before construction. However, the suggested layouts and cost estimates had required professional verification before actual construction. In the future, the system could have been enhanced with 3D house visualization, eco-friendly design recommendations, advanced AI-based design generation, and updated construction material prices. These improvements could have made the application more useful, flexible, and effective for users planning their dream homes.

**Keywords:** *AI – Smart House Planner, House Design, Budget Estimation, Interior Design, Artificial Intelligence, Flask, SQLite*

## DeskLink: An Android Application that Streams a Linux PC's Desktop to a Mobile Device in Real Time Over a Local Network

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### Abstract

DeskLink is a LAN-based desktop streaming system that enables users to view their Linux PC's screen on an Android device in near real time. The primary objective of the project is to develop a simple and lightweight solution that establishes a direct connection between a PC and an Android device using the PC's local IP address, eliminating the need for external internet services. The PC-side application is developed using Python and utilizes modern Linux technologies, including the GNOME ScreenCast portal, PipeWire, and GStreamer, to securely capture and process the desktop in a Wayland environment. The captured screen data is intended to be encoded and transmitted over the local network to the Android application, where it can be displayed as a live desktop stream. The initial version of DeskLink focuses on reliable screen capture and real-time video streaming over a LAN. Future versions may extend the system with features such as audio streaming, remote mouse and keyboard control, improved video compression, and optimized streaming performance. Overall, the project combines desktop capture, multimedia processing, network communication, and Android application development to create a practical remote desktop streaming solution.

**Keywords:** *DeskLink, Remote Desktop, Screen Streaming, Android Application, Linux, LAN, Real-Time Streaming, Wayland, GNOME ScreenCast, PipeWire, GStreamer, Python, Network Communication, Desktop Capture, Video Streaming*

# Design and Implementation of a Negotiation – Enabled E–Commerce Platform

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## Abstract

Fixed prices dominate online retail, leaving shoppers little room to bargain, a practice that remains common in traditional markets. This paper presents ShopEase, a web application that adds a structured negotiation step to the standard online purchase flow. Buyers can browse a catalogue, add products to a cart, propose a price for an item, and accept, reject, or counter the seller's response. Sellers can list and manage their products and decide how to respond to each offer. ShopEase is built with Java, JSP, and Servlets on Apache Tomcat, uses MySQL to store users, products, negotiations, orders, and payments, and relies on Bootstrap for the interface. Razorpay is used for online payment processing. Separate buyer and seller roles with user authentication keep each side's functions distinct, and an agreed price carries directly into checkout, so negotiation does not interrupt ordinary shopping. The implementation shows that an offer and counter-offer cycle can be embedded in a conventional e-commerce workflow while cart, order, and payment features continue to operate as usual. The work offers a practical reference design for bargaining-enabled online stores and a base for later additions such as automated pricing rules and personalized recommendations.

**Keywords:** *E-Commerce, Dynamic Price Negotiation, Buyer–Seller Interaction, Offer and Counter-Offer, Web-Based Marketplace*

# A Web – Based Digital Comic Reading and Interactive Story Telling Platform

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## Abstract

Digital comics have provided readers with a convenient way to enjoy stories using computers and other digital devices. However, comic content available through different sources may not always provide a simple and organized reading experience. To address this, this paper presented a Web-Based Digital Comic Reading and Interactive Storytelling Platform that was developed to make comic reading easier, more engaging, and convenient for users. The proposed system organized comic stories into individual chapters and panels, allowing users to select a comic, choose a chapter, and follow the story through an ordered sequence of panels. It also included a login interface, comic selection, chapter navigation, and panel navigation to provide a structured reading experience. The application was developed using web technologies such as HTML, CSS, and JavaScript, with an emphasis on an attractive interface and simple navigation. The system provided a dedicated platform for accessing digital comic content and served as a foundation for adding more stories and interactive features in the future. Further development could include database integration, user profiles, search and bookmarking options, multilingual comic content, responsive mobile support, and an administrative module for managing comics.

**Keywords:** *Web Application, Digital Comics, Comic Reading, Interactive Storytelling, HTML, CSS, JavaScript, User Interface*

# AI Second Brain: A Web – Based Intelligent Personal Knowledge Management System for Organizing, Retrieving and Managing Digital Information

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## Abstract

The AI Second Brain project was being developed as an intelligent personal knowledge management system for storing, organizing, retrieving, and managing information through a single platform. The application was being developed using Python and Flask in Visual Studio Code (VS Code) on the Windows platform. The frontend was being designed using HTML, CSS, and JavaScript, while Flask was being used for backend processing and application functions. SQLite 3 was being used as the database for storing user profiles, notes, PDF records, images, and other required information. The frontend and backend were being connected through Flask routes and Python database functions for managing user data efficiently. AI-based features were being integrated for intelligent chat, smart search, and PDF summarization. The system was also supporting PDF and image management, reminders, and voice output for spoken AI responses. The interface was being designed with a dark premium theme, glassmorphism, AI-inspired blue and purple effects, clean typography, and minimal animations. Overall, the AI Second Brain was being developed to simplify personal information management by helping users access, organize, and maintain their stored knowledge through a single digital platform.

**Keywords:** *Artificial Intelligence, Personal Knowledge Management, Flask, SQLite 3, Smart Information Management*

# DYSON AI: A Multimodal Agentic Architecture for Context – Aware Conversational Intelligence and Autonomous Web Task Execution

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## Abstract

The growing capabilities of large language models have enabled AI systems to move beyond conventional question-answering toward context-aware assistance and real-world task execution. This paper presents Dysonex, a multimodal personal AI assistant designed to integrate conversational interaction, persistent memory, voice-based communication, and browser-driven task automation within a unified architecture. The proposed system interprets natural-language requests, identifies user intent, maintains conversation-specific context, and routes tasks to appropriate service modules. A persistent memory mechanism stores structured conversation information and summaries, enabling relevant contextual information to be retrieved across subsequent interactions while reducing unnecessary processing of complete conversation histories. The system further employs browser automation to execute multi-step digital workflows, including product discovery, selection, checkout preparation, and other service-oriented operations. Human confirmation is incorporated before irreversible actions to maintain user control over externally consequential tasks. The architecture also provides session isolation, authentication-state management, error handling, and modular integration of external services. Voice interaction extends the system beyond conventional text-based interfaces, enabling more natural human–AI communication. By combining contextual reasoning, persistent memory, multimodal interaction, and controlled web automation, the proposed framework aims to bridge the gap between conversational AI and actionable digital assistance. The resulting architecture provides a foundation for developing scalable personal AI agents capable of performing context-aware, user-directed digital tasks.

**Keywords:** *Artificial Intelligence, Multimodal AI, Conversational AI, Persistent Memory, Browser Automation*

# CircuitStock: A web – Based Electronics Management and Sale System

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## Abstract

Inventory management plays an important role in electronics businesses by helping them maintain product availability, organize stock details, and manage daily inventory activities. Traditional inventory handling methods often involve manual documentation and separate records, which may cause incorrect stock information, delays in updating transactions, and difficulties in managing suppliers and electronic components. To overcome these issues, CircuitStock: An Intelligent Digital Platform for Smart and Efficient Electronics Inventory Management has been designed as a web-based application that simplifies inventory operations through a centralized digital system. The proposed application allows authorized users to store, update, and manage electronic product information, including product identification codes, categories, brands, suppliers, prices, available quantities, reorder limits, and product images. It also provides facilities for recording stock movements, handling purchase and sales transactions, adjusting inventory quantities, managing spare parts, maintaining supplier details, and monitoring service and maintenance activities. In addition, product classification, search options, and filtering features help users retrieve the required information easily. A secure login mechanism with role-based access permissions helps ensure that system operations are available according to each user's responsibilities. By integrating these functions into a single platform, CircuitStock aims to improve stock monitoring, reduce errors caused by manual data entry, simplify inventory-related tasks, and support organized decision-making in electronics businesses. The system provides a practical digital solution for maintaining inventory records and managing electronic products more systematically and efficiently.

**Keywords:** *CircuitStock, Electronics Inventory Management, Stock Monitoring, Supplier Management, Spare Parts Management, Web-Based Application*

# AI – Enabled Automated Vehicle Identification and Real – Time Entry – Exit Monitoring System

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## Abstract

The increasing number of vehicles in educational institutions, parking facilities, and controlled-access environments has created a growing need for automated and reliable vehicle monitoring systems. This study presents an AI-Based Intelligent Vehicle Management System Using Automated Number Plate Recognition for Entry–Exit Monitoring, developed to automate vehicle identification and maintain digital movement records. The proposed system is implemented using Python, with OpenCV employed for camera-based image acquisition and image processing and EasyOCR used to recognize vehicle number plates. A Tkinter-based graphical user interface provides secure login, dashboard access, and camera interaction within an integrated application. The system captures vehicle images through a connected camera and identifies the number plate using image processing techniques. The recognized plate information is processed to obtain the vehicle registration number, after which the system records additional attributes such as vehicle color and vehicle type. The recognized vehicle number is used to manage entry and exit transactions, while a detection cooldown mechanism reduces repeated records caused by continuous camera detection. Pandas is utilized for data processing and record management, and a CSV-based storage mechanism maintains vehicle number, color, vehicle type, entry time, and exit time. The proposed system integrates computer vision, optical character recognition, graphical user interaction, and structured data management into a unified workflow. By reducing dependence on manual record maintenance, the system supports organized monitoring and retrieval of vehicle movement information. The implementation demonstrates the feasibility of a lightweight and cost-effective vehicle management solution for educational institutions, parking facilities, and other controlled-access environments.

**Keywords:** AI, ANPR, OCR, OpenCV, EasyOCR, Vehicle Management, Entry–Exit Monitoring

# Intelligent Digital Campus: Leveraging Artificial Intelligence for Enhanced College Services

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## Abstract

The CEOA College Smart Web Portal is a modern web-based platform designed to provide students, parents, faculty, and visitors with a seamless and engaging digital experience. The project focuses on transforming traditional college website navigation into a fast, intuitive, and user-friendly interface where important academic, institutional, admission, and campus information can be accessed with minimal effort. A key feature of the system is the Quick Find Smart Search, which enables users to instantly locate relevant sections such as courses, admissions, college information, facilities, and contact details without manually scrolling through multiple pages. With keyboard accessibility through Ctrl + K, users can search, navigate, and jump directly to the required section, significantly improving the overall browsing experience. The platform also provides structured information about the institution, including About Us, Vision and Mission, Leadership, Academics, Courses, Admissions, Campus facilities, and Contact information. The application process is integrated to provide a convenient way for prospective students to submit their details online. The project combines modern web technologies, responsive design, intuitive navigation, and enhanced search functionality to create a digital platform that is both informative and easy to use. By focusing on accessibility, efficiency, and user experience, the CEOA College Smart Web Portal aims to provide a faster, smarter, and more connected approach to accessing college information online.

**Keywords:** CEOA College, Smart Web Portal, Quick Find, Smart Search, Web Application, User Experience, Responsive Design, Online Admission, Digital Campus, College Management

# Building a Predictive HR Attrition Dashboard using Power BI and DAX

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## Abstract

In my project, I would like to choose a business in the competitive circumstances of the era; organisations increasingly rely on data-driven decision-making to manage our most valuable asset: human capital. Employee attrition, if left unaddressed, leads to increased recruitment costs, loss of institutional knowledge, and disruption in organisational productivity. This project illustrates the complete journey of transforming raw HR data into meaningful, actionable decisions through the development of an interactive Employee Attrition Dashboard using Microsoft Power BI. A dataset comprising 500 employee records, including demographic details, compensation, tenure, job satisfaction, and overtime status, was processed using Power Query for data cleaning and transformation. DAX (Data Analysis Expressions) was extensively used to derive critical HR metrics such as Attrition Rate, Average Tenure, and Average Monthly Income, along with a custom-built Attrition Risk classification that segments employees into High, Medium, and Low risk categories based on overtime, satisfaction, and tenure patterns. The solution or resulting dashboard offers a multi-page interactive experience featuring KPI summaries, department- and gender-wise attrition breakdowns, monthly hiring-versus-exit trend visualisation, and a detailed matrix analysis of attrition rate across departments and job roles. Key findings show that employees working overtime experience considerably higher attrition, and that the Research & Development department records the highest attrition rate across the organisation. By converting raw employee data into clear visual insights, this project demonstrates how the Business Intelligence tools can bridge the gap between data and decision-making, empowering HR teams to proactively identify at-risk employees and design effective retention strategies.

**Keywords:** *Employee Attrition, Power BI, DAX, HR Analytics, Data Visualisation*

# Smart Educational Web Platform: Improving Accessibility and User Experience in College Services

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## Abstract

The increasing adoption of digital technologies in higher education has created a need for institutional websites that deliver information in an efficient, accessible, and user-centric manner. This project presents a modern digital web platform for CEOA College, designed to integrate institutional, academic, admission, and campus-related information within a structured and responsive environment. The platform aims to simplify information access and enhance digital interaction for students, parents, faculty members, and prospective applicants. A significant feature of the proposed platform is the Quick Find intelligent navigation system, which enables users to locate relevant information through a centralized search interface without navigating through multiple menus or pages. The system supports keyboard accessibility through Ctrl + K, allowing users to quickly search and access information related to courses, admissions, college facilities, institutional details, and contact information. The platform also incorporates organized institutional content, responsive layouts, intuitive navigation, and an online application facility. By integrating responsive web design, structured information architecture, intelligent search functionality, and accessible navigation, the proposed platform provides an efficient approach to digital information delivery within an educational institution. The project demonstrates how user-focused web technologies can improve information accessibility, simplify online navigation, and enhance the overall digital experience for the college community and prospective applicants.

**Keywords:** *Educational Web Platform, Intelligent Search, Quick Find, Digital Campus, Web Accessibility, Responsive Web Design, Information Architecture, Online Admission*

# QR VAULT: Smart & Secure QR Attendance for Student Database System

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## Abstract

QR Vault is a smart and portable attendance management system developed to make student attendance recording simple, secure, and efficient. The system combines QR code technology with location-based verification to ensure that attendance is marked only when students are within a 100-meter range of the authorised classroom or institution. This helps reduce manual work and prevents unauthorised or proxy attendance. Students can scan QR codes, view their attendance percentage, and submit On-Duty (OD) and Leave Forms. Faculty members can create attendance sessions, monitor records, and verify student requests. The attendance maintainer can manage student, faculty, and attendance information. In addition, the system provides a centralised platform for maintaining attendance records digitally, reducing paperwork and minimising errors caused by manual data entry. The location verification feature adds a layer of security by ensuring that attendance is recorded only from the permitted area. The system also helps faculty members track attendance efficiently and identify students with low attendance. By providing quick access to attendance information and request management, QR Vault improves communication between students, faculty, and the attendance maintainer. Overall, QR Vault provides a reliable, secure, and user-friendly solution for managing attendance across different classrooms and academic activities.

**Keywords:** *QR Code, Smart Attendance, Location Verification, 100-Meter Radius, OD Management, Leave Management, Student Attendance, Faculty Management*

# Smart Social Communication and Messaging Platform

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## Abstract

The increasing use of digital communication has created a need for smart and convenient platforms that allow people to stay connected anytime and anywhere. Yogo – Smart Social Communication and Messaging Platform is a modern web-based application developed to provide users with an easy, interactive, and reliable environment for online communication. The main objective of Yogo is to bring different communication features together in a single platform. The application enables users to register and securely log in to their accounts, create and manage their profiles, search for other users, and send or accept friend requests. After establishing a connection, users can communicate through real-time text messaging. The system provides features such as message timestamps, online and offline status, typing indicators, and message read status to improve the overall chatting experience. Yogo also supports voice and video communication, allowing users to communicate more effectively without depending on separate applications. The responsive user interface is designed to provide a simple and comfortable experience on desktops, tablets, and mobile devices. Real-time technologies are used to deliver messages and communication updates quickly between connected users. The proposed system provides a centralized platform for social communication and reduces the need to use multiple applications for basic messaging and calling requirements. In the future, Yogo can be enhanced with group conversations, multimedia sharing, push notifications, message search, privacy controls, and advanced security features. Overall, Yogo aims to provide a simple, flexible, and feature-rich platform for modern digital communication.

**Keywords:** *Smart Communication, Real-Time Messaging, Social Platform, Voice Call, Video Call, WebRTC, User Authentication, Online Chat*

## Zoya Services – All – in – One Citizen Services

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### Abstract

The increasing need for convenient and accessible citizen and government-related services has created a demand for a single digital platform that simplifies various application and support processes. This project presents Zoya Services – All-in-One Citizen Services, a web-based service platform developed to bring multiple essential citizen services together in one organized and user-friendly system. The platform provides service information and application support for commonly required services such as PAN Card new application, correction and update, Voter ID registration and correction, Aadhaar-related services, Driving License services, Passport services, vehicle-related services, and other essential citizen services. The system includes important features such as user registration and login, administrative login, service-wise information pages, application details, document requirements, application guidance, and application status tracking. A simple, responsive, and user-friendly interface is designed to make the platform accessible through computers, tablets, and mobile devices. The main objective of Zoya Services is to reduce the difficulty faced by users while searching for different service procedures, required documents, and official resources across multiple platforms. By organizing essential service information in one centralized platform, the system helps users understand the application process more easily and access relevant resources efficiently. The administrative module can be used to manage users, monitor service-related information, and handle application details. The proposed system can be further enhanced by integrating online appointment booking, secure payment facilities, real-time notifications, document verification, application progress updates, and authorized government service APIs. Overall, Zoya Services provides a structured digital approach for simplifying access to essential citizen services through a single platform.

**Keywords:** *Citizen Services, Government Services, PAN Card, Voter ID, Aadhaar Services, Online Services, Web Application, User Authentication, Application Tracking, Digital Services*

## Attendrio: Intelligent QR & Location – Based Attendance and Academic System

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### Abstract

Attendrio is a smart and portable attendance system. It simplifies and automates student attendance in educational institutions. It combines QR code technology with location-based verification, so it records attendance only when a student is within a defined 100-meter area of the authorised classroom or institution. This reduces manual work and helps prevent unauthorised or proxy attendance. The system provides separate access for students, faculty members, and attendance maintainers. Students can scan QR codes, view their attendance percentage, and submit On-Duty (OD) and Leave Forms. Faculty members can manage attendance sessions, monitor attendance records, and verify student requests. The attendance maintainer can manage student, faculty, and attendance data. The system stores attendance records digitally, which makes data management easier and more organised. It provides role-based access to protect important information and ensure that each user performs only authorised activities. QR code authentication lets faculty create attendance sessions and lets students record attendance quickly. Location verification adds a layer of security by checking the student's location during the attendance process. The system also reduces paperwork, saves time, and improves the accuracy of attendance records. Its portable design allows institutions to use the system across different classrooms, departments, and academic activities. Overall, Attendrio provides a simple, secure, and efficient solution for modern attendance management.

**Keywords:** *QR Code, Smart Attendance, Location Verification, 100-Meter Radius, OD Management, Leave Management, Student Attendance, Faculty Management*

# NOVA AI Studio: An Intelligent PDF to Video Generation Platform for Automated Visual Storytelling and AI Narration

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## Abstract

NOVA AI Studio – AI-Powered PDF to Video Generator is a web-based application designed to convert PDF files into page-by-page video. The system allows users to upload a PDF, automatically process each page, extract dialogue and subtitle text using Optical Character Recognition (OCR), and generate synchronized narration using AI-based text to speech technology. The Application is developed by Python, Flask, SQLite, HTML, CSS, and JavaScript. PDF pages are converted into visual frames while Tesseract OCR is used to identify text from speech bubbles and other readable areas. The extracted dialogue is organized according to its position on each page and assigned stable speaker profiles with different voices. Edge TTS is used to generate narration without requiring an Open AI API key. The generated narration is processed concurrently to reduce waiting time. After Narration is generated, FFMPEG combines the pdf pages and audios into an MP4 video. Each page remains visible for the required narration duration, and the system automatically transitions to the next page after the dialogue on the current page has been completed. The application also provides user authentication, project management, video preview, video download, history, and progress tracking for long video-generation tasks. The Proposed system provides an automated way to transform static pdf content into an audio-visual storytelling experience, reducing the need for manual video editing and voice recording. It can be further enhanced with advanced character recognition, emotion-based voices, multilingual OCR, background music, animation effects, and more realistic AI-generated character voices.

**Keywords:** *PDF to Video, AI Narration, OCR, Text-to-Speech, Character Voice Generation, Manga Processing, FFmpeg, Automated Storytelling, Multimedia Generation, Flask*

## Smart Household Consultancy Management System

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### Abstract

The Smart Household Consultancy Management System is designed to provide an easy digital platform for managing household-related consultancy services. People often need professional assistance for home maintenance, renovation, interior planning, electrical work, plumbing, and other household activities. Managing these services manually can be difficult and time-consuming. This system allows customers to create an account, view available consultancy services, and submit service requests based on their needs. Consultants can receive customer requests, check requirements, manage appointments, and provide appropriate guidance. The administrator manages users, consultants, services, and requests using a centralized database. The main purpose of this system is to reduce paperwork and manual effort while making consultancy services easier to access. It helps maintain customer and service records in an organized manner and improves communication between customers and consultants. The user-friendly interface makes the system simple to use. Overall, this system provides a convenient and systematic solution for managing household consultancy services.

**Keywords:** *Household Services, Consultancy, Customer, Consultant, Service Request, Appointment, Database, Management System, Web Application, Administrator*

## Ucars - Car Sales Information System

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### Abstract

The Used Car Condition Analysis and Price Estimation System is a web-based application designed to simplify the process of evaluating second-hand vehicles. In the used-car market, determining the correct price is difficult because vehicles may have different ages, mileage, maintenance histories, and physical conditions. This system provides an AI-based approach to analyze vehicle information and estimate a suitable price. Users can provide important details such as car brand, model, year, mileage, fuel type, and transmission. They can also upload photographs of different parts of the vehicle, including the front, rear, sides, and interior. Image processing techniques are used to examine the uploaded photographs and identify visible problems such as dents, scratches, damaged parts, and paint defects. The identified condition information can be considered along with vehicle details during price estimation. The system can also maintain the collected vehicle information using a database. The application presents the results through a simple and user-friendly interface. It helps users understand the vehicle's visible condition and estimated market value without depending completely on manual inspection. The main purpose of this project is to create an efficient digital solution for second-hand car evaluation. The combination of Artificial Intelligence, Machine Learning, image processing, and database technology can make the used-car assessment process easier, faster, and more convenient for buyers and sellers.

**Keywords:** *Artificial Intelligence, Machine Learning, Used Car, Price Prediction, Condition Analysis, Image Processing, Car Damage Detection, OCR, Database, Web Application*

# SPARK AI Studio: Intelligent PDF to Video Transformation for Automated Multimedia Storytelling

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## Abstract

SPARK AI Studio AI Powered PDF to Video Generator is a web-based application designed to transform PDF documents into page-by-page narrated videos. The system allows users to upload a PDF and automatically process its pages into visual frames while generating synchronized narration for the story content using AI-based text-to-speech technology . The application is developed using Python, Flask, SQLite, HTML, CSS, and JavaScript. PDF pages are converted into visual frames, while the text content of the document is processed to create narration. The system provides selectable voice profiles and uses Edge TTS to generate narration without requiring an OpenAI API key. Audio generation is optimized to reduce processing time and provide a smoother video-generation workflow . After the narration is generated, FFMPEG combines the PDF pages and corresponding audio into an MP4 video. Each page remains visible for the appropriate narration duration, and the system automatically transitions to the next page after the narration of the current page is completed. The application also provides user authentication, project management, video preview, video download, history, and progress tracking for long video-generation tasks . The proposed system provides an automated approach for transforming static PDF content into an engaging audio-visual storytelling experience, reducing the need for manual video editing and voice recording. The system can be further enhanced with multilingual narration, emotion-based voices, background music, animation effects, and more realistic AI-generated character voices.

**Keywords:** *PDF-to-Video, Artificial Intelligence, AI Narration, Text-to-Speech, Edge TTS, Voice Selection, PDF Processing, FFmpeg, Automated Video Generation, Audio-Visual Storytelling, Multimedia Content Generation, Python Flask*

## Home Service and Consultancy Management System

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### Abstract

The Household Consultancy Management System is a web-based application developed to manage household consultancy services in a simple and organized way. The system helps customers find suitable services for their household requirements such as home maintenance, interior design, electrical work, plumbing, cleaning, and renovation. Customers can register, log in, view available services, and submit their requirements through the system. Consultants can view customer requests, manage appointments, and provide suitable guidance. The administrator can manage customer details, consultant information, services, and service requests through a centralized database. This system reduces manual work, paperwork, and time required for managing household consultancy services. It also improves communication between customers and consultants. All important records are stored in the database, making them easy to access and manage. The system provides a simple and user-friendly interface for users. Overall, the Household Consultancy Management System provides an efficient and convenient platform for managing household consultancy services.

**Keywords:** *Home Management, Service Provider, User, Online Service, Booking, Maintenance, Consultation, Records, Feedback, Admin*

## Second Hand Car Sales Prediction

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### Abstract

The increasing need for convenient and accessible citizen and government-related services has created a demand for a single digital platform that simplifies various application and support processes. This project presents Zoya Services – All-in-One Citizen Services, a web-based service platform developed to bring multiple essential citizen services together in one organized and user-friendly system. The platform provides service information and application support for commonly required services such as PAN Card new application, correction and update, Voter ID registration and correction, Aadhaar-related services, Driving Licence services, Passport services, vehicle-related services, and other essential citizen services. The system includes important features such as user registration and login, administrative login, service-wise information pages, application details, document requirements, application guidance, and application status tracking. A simple, responsive, and user-friendly interface is designed to make the platform accessible through computers, tablets, and mobile devices. The main objective of Zoya Services is to reduce the difficulty faced by users while searching for different service procedures, required documents, and official resources across multiple platforms. By organizing essential service information in one centralized platform, the system helps users understand the application process more easily and access relevant resources efficiently. The administrative module can be used to manage users, monitor service-related information, and handle application details. The proposed system can be further enhanced by integrating online appointment booking, secure payment facilities, realtime notifications, document verification, application progress updates, and authorized government service APIs. Overall, Zoya Services provides a structured digital approach for simplifying access to essential citizen services through a single platform.

**Keywords:** *Citizen Services, Government Services, PAN Card, Voter ID, Aadhaar Services, Online Services, Web Application, User Authentication, Application Tracking, Digital Services*

## Yogo – A Real – Time Chatting and Communication Application

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### Abstract

The rapid development of digital communication has created a growing need for fast, secure, and user-friendly communication platforms. Yogo – A Real-Time Chatting and Communication Application is a modern web-based application developed to provide users with a simple and convenient platform for real-time communication. The main purpose of Yogo is to connect users and enable them to communicate through instant messaging, voice calls, and video calls. The application allows users to create an account, log in securely, manage their profile, and connect with other users through friend requests. Once users are connected, they can exchange messages in real time. The system provides useful communication features such as message timestamps, online and offline status, typing indicators, and read receipts. Voice and video calling features are also integrated to provide a more complete communication experience. Yogo is designed with a simple, responsive, and user-friendly interface so that users can access the application comfortably on different devices. Real-time communication technologies are used to provide quick message delivery and smooth interaction between users. Authentication and user management features help maintain a controlled communication environment. The proposed application reduces the need to use multiple platforms for different communication purposes by combining chatting, voice calling, and video calling into a single application. Yogo can be further enhanced by adding group chats, image and file sharing, push notifications, message search, and advanced security features. Overall, Yogo provides an efficient and convenient solution for modern real-time digital communication.

**Keywords:** *Real-Time Chat, Messaging, Voice Call, Video Call, Friend Request, WebRTC, User Authentication, Online Communication*



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