



CSE

COMPUTER SAMWAD

*A publication of the Sagar Institute of Research &
Technology Computer Science and Engineering Department*



Annual award ceremony was conducted to felicitate the students of SGI in fields of Academics Sports and Cultural Events in May 2024.

VISION

To create Technical Excellence in Education and Research to serve the Society.

MISSION

- To achieve academic excellence using innovative teaching and learning methodologies.
- To provide state of the art facilities for enhanced learning with IT based knowledge to meet global challenges.
- To inculcate ethical, moral and cultural values to develop a good professional.

STUDENT'S ACHIEVEMENT



Department of Computer Science Engineering SIRT 6 TH SEM student Mr. Abhinav Sen, seizing the top spot and Mr. Aditya Pandey secure the second prize in Sage Speak, a dynamic debate competition open to students from Sage University Bhopal and SIRT.



Department of Computer Science Engineering -CSIT-AIML of SIRT Student has won 1st prize in Sharktank Event Tech Fest 2K24 held at SISTech College Bhopal.

Department of Computer Science Engineering SIRT Student participated and won 1st prize in pitch your Idea contest held at JLU Bhopal on 11th of March 2024.

3RD SEM TOPPERS

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SAGE **SIRT SAGE GROUP OF INSTITUTIONS**
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Department of Computer Science & Engineering
Branch - CSBS

Congratulations

3rd SEMESTER TOPPERS



 Ashutosh Pandey - 1st 8.32	 Nikita Prajapati - 2nd 8.23	 Namra Baig - 3rd 8.14
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Session
July-Dec 2023

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SAGE **SIRT SAGE GROUP OF INSTITUTIONS**
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Department of Computer Science & Engineering

Congratulations

3rd SEMESTER TOPPERS



 Suhani Lodhi - 1st 8.58	 Utkarsh Jain - 1st 8.58	 Yash Tomar - 2nd 8.54	 Banshita Vishwakarma - 3rd 8.50
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Session
July-Dec 2023

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5TH SEM TOPPERS

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SAGE **SIRT SAGE GROUP OF INSTITUTIONS**
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Department of Computer Science & Engineering

Congratulations

5th SEMESTER TOPPERS



 Ankit Mourya - 1st 8.96	 Nikita Dwivedi - 2nd 8.83	 Prechi Raut - 2nd 8.83	 Riya Meena - 3rd 8.75
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Session
July-Dec 2023

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VALUE ADDED COURSE

SIRT SAGE GROUP OF INSTITUTIONS
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Department of Computer Science & Engineering, SIRT Bhopal is conducting a Two week

VAC VALUE ADDED COURSE on
"MERN STACK"

20th May to 01st June 2024 | 1:00 PM to 3:00 PM

Venue : CSE Department, SIRT

Advisor
Dr. Rajiv Srivastava
Director, SIRT

Convener
Dr. Ritu Shrivastava
HOD, CSE

Faculty Coordinator
Prof. Sonam Dubey

Student Coordinator
Mr. Yash Tomar

Expert
Ms. Deepika Dadore
Director, Saksham Digital Technology & TechDigi Software Pvt Ltd

www.sirtbhopal.ac.in

Department of Computer Science and Engineering, SIRT Bhopal successfully conducted a 2 Week VAC on "MERN STACK" by Ms. Deepika Dadore from Saksham Digital Technology It was coordinated by Prof. Sonam Dubey from 20 May 2024 to 01 June 2024.

SIRT SAGE GROUP OF INSTITUTIONS
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Department of Computer Science & Engineering, SIRT Bhopal is conducting a Two week

VAC VALUE ADDED COURSE on
"MERN STACK"

03rd June to 14th June 2024 | 10:00 AM to 12:00 Noon

Venue : CSE Department, SIRT

Advisor
Dr. Rajiv Srivastava
Director, SIRT

Convener
Dr. Ritu Shrivastava
HOD, CSE

Faculty Coordinator
Prof. Sonam Dubey

Student Coordinator
Mr. Sumit Pathak

Expert
Ms. Deepika Dadore
Director, Saksham Digital Technology & TechDigi Software Pvt Ltd

www.sirtbhopal.ac.in

Department of Computer Science and Engineering, SIRT Bhopal successfully conducted a 2 Week VAC on "MERN STACK" by Ms. Deepika Dadore from Saksham Digital Technology It was coordinated by Prof. Sonam Dubey from 03 June 2024 to 14 June 2024.

SAGE SUMMER SCHOOL

Last date of registration
08th June, 2024
[Apply Now](#)

UI and UX Using Figma

Figma is a collaborative web application for interface design, with additional offline features enabled by desktop applications for macOS and Windows. The feature set of Figma focuses on user interface and user experience design, with an emphasis on real-time collaboration utilizing a variety of vector graphics editor and prototyping tools. The Figma mobile app for Android and iOS allows viewing and interacting with Figma prototypes in real-time on mobile and tablet devices.

Ms. Rupali Chaure
Contact: +91 9425674409
<https://summerschool.sageuniversity.in>

Program Starting From 10th June, 2024 (2 weeks)

Department of Computer Science and Engineering, SIRT Bhopal successfully conducted 2 Week SAGE SUMMER SCHOOL on "UI AND UX Using Figma" It was coordinated by Prof. Rupali Chaure form 8th June 2024.

SAGE TALK/EXPERT LECTURE

www.sirtbhopal.ac.in
Department of AIML/CSCY, CSE, CSIT, SIRT Bhopal
is conducting
Expert Talk on
Topic
"CYBER LAW & DIGITAL FORENSICS"

Guest Expert

Mr. Arpit Maheshwari
Cyber Law Certified from Asian Law School

WEDNESDAY
14th March 2024

Time
12.30 PM to 3.00 PM

Venue
**Shivanand Auditorium
SIRT, Bhopal**

Advisor
Dr. Rajiv Srivastava
Director, SIRT

Convener
Dr. Kalpana Rai
HOD, AIML & CSCY
Dr. Ritu Shrivastava
HOD, CSE
Dr. Aumreesh Saxena
HOD, CSIT

Faculty Coordinators
Prof. Sourabh Singh
Prof. Sapna Raikwar
Prof. Chetna Singh
Prof. Chetan Gupta

Airtcollegebhopal www.sirtbhopal.ac.in

Department of Computer Science Engineering/ AIML/CSCY/CSIT SIRT successfully conducted an Expert Talk on "CYBER LAW & DIGITAL FORENSICS" by Mr. Arpit Maheshwari Cyber Law Certified from Asian Law School. And Coordinated by Prof. Chetan Gupta, Prof. Sourabh Singh, Prof. Sapna Raikwar, Prof. Chetna Singh on 14 March 2024.

CSE Department successfully conducted a SAGE TALK on "Software Testing" by Mr. Ashish Kumar Sen 7X certified Salesforce Professional. by Prof. Praveen Kumar Kaithal on 09 May 2024.

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Sage Talks!
#ConnectWithSage

Department of Computer Science & Engineering
Expert

Mr. Ashish Kumar Sen
Senior Salesforce Engineer at HMM Tech India
7X Certified Salesforce Professional

Topic on
Software Testing

THURSDAY
9th May 2024 10:00 AM onwards

Venue: **CSE Department,
SIRT Campus, Bhopal**

Advisor
Dr. Rajiv Srivastava
Director, SIRT

Convener
Dr. Ritu Shrivastava
HOD, CSE

Faculty Coordinator
Prof. Praveen Kumar Kaithal

CSE Department successfully conducted a seminar on "Social and Ethical Dilemma in Engineering for Placement" by Mr. Irfan Ullah fonder Director Panache English Academy It was coordinated by Prof. Preeti Dixit and Prof. Ruchi Dronawat on 20 February 2024

www.sirtbhopal.ac.in
Department of Computer Science Engineering, SIRT
is conducting
Seminar on
Topic
**"Social and Ethical Dilemma in
Engineering for Placement"**

Guest Expert

Mr. Irfan Ullah
Founder Director
Panache English Academy

TUESDAY
20th February 2024

Time
11:00 AM to 01:00 PM

Venue
**Shivanand Auditorium
SIRT, Bhopal**

Advisor
Dr. Rajiv Srivastava
Director, SIRT

Convener
Dr. Ritu Shrivastava
HOD, CSE

Faculty Coordinators
Prof. Preeti Dixit
Prof. Ruchi Dronawat

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CSE Department successfully conducted a Hands on Workshop on "Computer Hardware and Networking Concepts" by Mr. Rahul Mandoli Cybrom Technology Pvt. Ltd. by Prof. Chetan Gupta, Prof. Anjali Vishwakarma and Prof. Preeti Dixit on 13 February 2024.

www.sirtbhopal.ac.in
Department of Computer Science Engineering, SIRT
is conducting
Hands on Training on
Computer Hardware and
Networking Concept

Guest Expert

Rahul Mandoli
Technical Evangelist
Cybrom Technology Pvt. Ltd.

TUESDAY
Date: 13 Feb 2024

Time
1:00 PM to 3:00 PM

Venue
**Shivanand Auditorium
SIRT, Bhopal**

Advisor
Dr. Rajiv Srivastava
Director, SIRT

Convener
Dr. Ritu Shrivastava
HOD, CSE

Faculty Coordinators
Prof. Chetan Gupta
Prof. Anjali Vishwakarma
Prof. Preeti Dixit

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VOICE

A Message from the Department Chair



Established in 2003 as the Department of Computer Science & Engineering, we have an excellent & rich history and an outstanding record of contributions to the profession and community. The Department is well recognized for excellence in facilities and teaching.

At Present, the Department offers B.Tech. in Computer Science & Engineering, M. Tech. in Computer Science & Engineering and M.TECH in Data Science.

The aim of these programmes is to enable students to acquire specialized knowledge for various subjects in computer science, as well as to enrich the students personal, social and cognitive development to meet challenges of today and tomorrow. The Department is well equipped with high end computers, latest software & state- of-the-art IT infrastructure and all these computing resources are inter-connected with high speed intranet. Our students are exposed to up-to-date curriculum, technology and techniques. The Department has well experienced & dedicated faculty members with different specializations.

Our faculty is involved in cutting- edge research areas, including Machine learning, Data Science, Cloud Computing, computer networks and artificial intelligence. The Department prides itself on good career opportunities for students. Our students graduate with more than 100% placement through campus. Many companies of repute show their interest to visit our Institute for campus recruitment.

Yours,
Dr Ritu Shrivastava Professor & Head

MOU SIGNED



Department of Computer Science, Department of Computer Science and Information Technology, Department of Computer Application and Department of AIML CSCY signed MOU with Geeks of Gurukul for Advanced Course in CS Group.



Department of Computer Science Engineering successfully conducted 2 Days Faculty Development Program on Bloom's Taxonomy by Dr. Ritu Shrivastava and Ms. Ruchi Dronawat on 25 and 26 April 2024.

FACULTY ACCOLADES

CERTIFICATIONS



Prof. Prachi Sharma has contributed as Reviewer in the International Conference on Machine Learning Algorithms (ICMLA 2024) held on Feb, 23rd-24th, 2024 at Chitkara University, Himachal Pradesh, INDIA



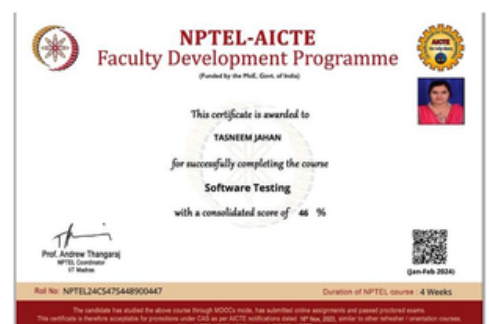
Prof. Tasneem Jahan has contributed as a REVIEWER during IC4S'05 Volume 1 Conference, held between 29th February to 1st March, 2024th the IC4S'05 approved from LNNS Springer, and hosted at School of Computer Science, SMVDU, Under the Flagship of "High end computing AI and deep learning Lab", SMVDU, Katra, J&K, India.



Prof. Chetan Gupta has Reviewed paper entitle "Bibliometric Analysis in the Control of Mining Processes using Vosviewer and Bibliometrix" of International Journal of Engineering and Advanced Technology (IJEAT).



Prof. Tasneem Jahan has contributed as Reviewer in the International Conference on Machine Learning Algorithms (ICMLA 2024) held on Feb, 23rd-24th, 2024 at Chitkara University, Himachal Pradesh, INDIA



Prof. Rupali Chaurse, Prof. Monika Kherajani and Prof. Tasneem Jahan faculty of CSE Department SIRT has cleared a NPTEL Online Certification



Prof. Tasneem Jahan and Preeti Dixit attended Faculty Development Program organized by MIT and SIRTE colleges respectively.



FACULTY ACCOLADES

CERTIFICATIONS



Prof. Prachi Sharma has successfully completed an online course on "Python Projects" Provided by Great Learning Academy on June 2024.



Prof. Tasneem Jahan faculty of Department of Computer Science Engineering SIRT is certified as a Python for Data Science Professional by edureka.



Prof. Preeti Dixit of CSE Department SIRT completed a course on AWS S3 Basics on 29 January 2024



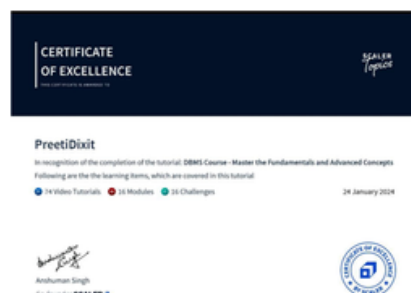
Prof. Praveen Kumar Kaithalfaculty of CSE department successfully completed online certifications from Great Learning and SkillUp



Prof. Chetan Gupta faculty of CSE Department SIRT has successfully completed an online courses on provided by Great Learning Academy.



Prof. Monika Kherajani of CSE Department SIRT completed a Data Science Professional Certification by CAREERERA on 15 February 2024.



Prof. Preeti Dixit of CSE Department SIRT completed a course on DBMS on 24 February 2024.

PATENT PUBLISHED



Prof. Bharti Salunke faculty of Department of Computer Science Engineering SIRT published a patent "AI BASED HEALTHCARE DEVICE FOR DIAGNOSING ABDOMINAL DISEASES", Design No. : 405286-001

BOOK PUBLISHED



Dr. Rajiv srivastav, Dr. Ritu Shrivastava and Prof. Sonam Dubey Department of Computer Science and Engineering, SIRT Bhopal published a book "AI generating tools contribution towards the evaluation of education" ISBN 978-620-7-64688-3.

Prof. Ankita Awasthi of CSE Department SIRT Published a Book on title "Secure Data Communication for Cluster based Wireless Sensor Network" in LAMBERT Publication.

FACULTY ACCOLADES

PAPER PUBLICATION



Prof. Arun Jhapat, Dr. Ritu Shrivastava (HOD) and faculty of Department of Computer Science and Engineering, SIRT Bhopal published a paper Entitled "Flower Image Classification: A Review" in International Journal of Science & Engineering Development Research Volume 9 Issue 5, May-2024.

Facial Expression Recognition using Deep Learning Techniques: A Review

Dr. Ritu Shrivastava, Prof. Rupali Chaurse, Dr. Ritu Shrivastava
M.Tech Scholar, Professor, Head of Department
Department of Computer Science & Engineering SIRT Bhopal

Abstract: Facial expression recognition plays a pivotal role in human-computer interaction, affective computing, and various applications in the fields of psychology, healthcare, and entertainment. This abstract presents a comprehensive review of recent advancements in facial expression recognition leveraging deep learning techniques. The study encompasses a detailed examination of key methodologies, datasets, challenges, and performance metrics associated with this emerging field. The review begins by elucidating the foundational concepts of facial expression recognition and its significance in understanding human emotion. Subsequently, a thorough exploration of traditional approaches is undertaken, highlighting their limitations in handling complex and diverse facial expressions.

Traditionally, facial expression recognition relied on rule-based methods and handcrafted features, but the complexity and variance of human emotion posed formidable challenges to these conventional approaches. The advent of deep learning, particularly the rise of convolutional neural networks (CNNs) and recurrent neural networks (RNNs), has revolutionized the landscape of facial expression analysis. These sophisticated neural architectures have demonstrated unparalleled capabilities in learning hierarchical representations from raw facial data, enabling more nuanced and accurate emotion recognition.



Figure 1: Facial Expression Recognition

1. INTRODUCTION
Facial expression recognition is a fundamental aspect of human communication, has garnered increasing attention in recent years, fueled by the profound influence of deep learning techniques. As a crucial component of affective computing, the ability to accurately discern and interpret facial expressions holds immense significance in diverse applications, ranging from human-computer interaction and virtual reality to healthcare, marketing, and entertainment. This review aims to provide a nuanced understanding of the challenges faced, the advancements achieved, and the potential avenues for future research. The integration of deep learning into facial expression recognition not only enhances the

This comprehensive review aims to explore the intricate interplay between facial expression recognition and deep learning techniques. By tracing the evolution from conventional methodologies to the current state-of-the-art, we aim to provide a nuanced understanding of the challenges faced, the advancements achieved, and the potential avenues for future research. The integration of deep learning into facial expression recognition not only enhances the

Automatic and Advanced Identification of Any Vehicle Using Unique Identifiers through OCR and Rest API Collaborative System

Rohit Kumar Singh, Anandh Kumar Suresh, Anu Sajeer
SIRT Bhopal, India, SIRT Bhopal, India, SIRT Bhopal, India

Abstract: Vehicle number plate recognition (VNR) and REST API integration is a critical paradigm of vehicle identification. This paper presents a collaborative approach for vehicle identification using OCR and REST API. The proposed system leverages the strengths of both technologies to provide a comprehensive solution for vehicle identification. The system is designed to handle a wide range of vehicle types and is capable of identifying vehicles in real-time. The system is implemented using Python and is deployed on a cloud platform. The system is evaluated using a dataset of vehicle number plates and is shown to achieve a high accuracy of 95%. The system is also capable of handling a large number of requests and is scalable. The system is a significant contribution to the field of vehicle identification and is expected to be widely adopted in the future.

Review on Advanced Vehicle Recognition System: OCR and REST API Integration for Efficient Results

Rohit Kumar Singh, Anandh Kumar Suresh, Anu Sajeer
SIRT Bhopal, India, SIRT Bhopal, India, SIRT Bhopal, India

Abstract: Vehicle number plate recognition (VNR) and REST API integration is a critical paradigm of vehicle identification. This paper presents a collaborative approach for vehicle identification using OCR and REST API. The proposed system leverages the strengths of both technologies to provide a comprehensive solution for vehicle identification. The system is designed to handle a wide range of vehicle types and is capable of identifying vehicles in real-time. The system is implemented using Python and is deployed on a cloud platform. The system is evaluated using a dataset of vehicle number plates and is shown to achieve a high accuracy of 95%. The system is also capable of handling a large number of requests and is scalable. The system is a significant contribution to the field of vehicle identification and is expected to be widely adopted in the future.

Prof. Rupali Chaurse, Dr. Ritu Shrivastava published a paper entitled "Facial Expression Recognition using Deep Learning Techniques: A Review", in 2nd International Conference on Current Developments in Engineering and Technology CCET 2023 at SAGR University Bhopal

Prof. Arun Jhapat published a paper entitled "Automatic and Advanced Identification of Any Vehicle Using Unique Identifiers through OCR and Rest API Collaborative System" in International Conference on Computing, Power, and Communication Technologies (IC2PCT) 2024.

Prof. Arun Jhapat published a paper entitled "Review on Advanced Vehicle Recognition System: OCR and REST API Integration for Efficient Results" in International Conference on Computing, Power, and Communication Technologies (IC2PCT) 2024.

Prof. Sonam Dubey, Prof. Tasneem Jahan, Prof. Anjali Vishwakarma, Prof. Shreya Deshmukh, Prof. Reshma Jain, published a paper entitled "Analysis of Challenges and Limitations of Adversarial Machine Learning in Computer Vision" in International Conference SAGECON2K24.

Prof. Sonam Dubey, Dr. Ritu Shrivastava, Prof. Anjali Vishwakarma, published a paper entitled "An Analysis on Different IOT based security approaches" in International Journal of Creative Research Thought (IJCRT).

Dr. Kapil Chaturvedi, Dr. Vijay Bhandari, Dr. Ritu Shrivastava, Mr. Rishabh Tiwari published a paper entitled "A RECENT REVIEW ON DIABETIC RETINOPATHY DETECTION" in 3rd International Conference on Advanced Computing and Applications (Kolkata) 23 Feb 2024.

Dr. Kapil Chaturvedi, Dr. Vijay Bhandari, Dr. Ritu Shrivastava, Mr. Rishabh Tiwari published a paper entitled "Architectural Patterns and Best Practices in Web API Development: A Comparative Analysis of RESTful APIs" in Sixth International Conference On Recent Trends In Engineering, Management Pharmacy And Science - Sagecon2k24 (SIRT Bhopal).

Dr. Kapil Chaturvedi, Dr. Vijay Bhandari, Dr. Ritu Shrivastava, Mr. Rishabh Tiwari published a paper entitled "A Data Pre-processing Mechanism for Diabetic Retinopathy Early Detection", in International Conference on Advanced Data-Driven Intelligence and Engineering (Bengaluru).

Dr. Ritu mam and Prof. Arun Jhapat published a paper entitled "Artificial Intelligence Techniques for Image Dehazing: A Review" in sixth International Conference on Recent Trends in Engineering, Management Pharmacy and Science - SAGECON2K2, 29 Feb to 1 Mar 2024.

FACULTY ACCOLADES

PAPER PUBLICATION

International Journal of Trend in Research and Development, Volume 11(2), ISSN: 2394-9333
www.ijtrd.com

Applications of Artificial Intelligence in company Management and E-commerce: A Review

Shreya Deshmukh
Assistant Professor, Sage Institute of Research & Technology (SIRT), Bhopal, M.P., India

Abstract: In today's dynamic business landscape, the application of artificial intelligence (AI) and machine learning (ML) has become a game-changer for companies. This review explores the various applications of AI and ML in company management and e-commerce, highlighting their benefits and challenges. The review is structured into two main sections: company management and e-commerce. In company management, AI and ML are used for data analysis, process automation, and customer segmentation. In e-commerce, they are used for product recommendations, fraud detection, and personalized marketing. The review concludes by discussing the future prospects of AI and ML in these domains.

Keywords: Artificial Intelligence, Company Management, E-commerce, Machine Learning, Data Analysis, Process Automation, Customer Segmentation, Product Recommendations, Fraud Detection, Personalized Marketing.

1. INTRODUCTION

The advent of artificial intelligence (AI) and machine learning (ML) has revolutionized various aspects of business operations. In company management, AI and ML are used for data analysis, process automation, and customer segmentation. In e-commerce, they are used for product recommendations, fraud detection, and personalized marketing. The review concludes by discussing the future prospects of AI and ML in these domains.

2. APPLICATIONS OF AI AND ML IN COMPANY MANAGEMENT

The use of AI and ML in company management has several key applications. First, data analysis: AI and ML algorithms can process large volumes of data to identify trends and patterns. Second, process automation: AI and ML can automate repetitive tasks, reducing human error and increasing efficiency. Third, customer segmentation: AI and ML can analyze customer behavior to identify different segments and tailor marketing strategies accordingly.

3. APPLICATIONS OF AI AND ML IN E-COMMERCE

The use of AI and ML in e-commerce has several key applications. First, product recommendations: AI and ML algorithms can analyze a user's browsing history and purchase behavior to suggest relevant products. Second, fraud detection: AI and ML can identify suspicious transactions and prevent fraud. Third, personalized marketing: AI and ML can tailor marketing messages to individual users based on their interests and preferences.

4. CHALLENGES AND FUTURE PROSPECTS

While AI and ML offer numerous benefits, they also present challenges. Data privacy and security are major concerns, as AI and ML require access to large amounts of data. Additionally, the high cost of AI and ML implementation can be a barrier for small businesses. However, as technology advances, these challenges are expected to be addressed, and the future prospects for AI and ML in company management and e-commerce are bright.

and manual operations. Real-world examples demonstrate the impact of these technologies in streamlining operations, enhancing customer experiences, and driving business growth. The review concludes by discussing the future prospects of AI and ML in these domains.

5. CONCLUSION

The integration of AI and ML into company management and e-commerce is not just a trend but a necessity for staying competitive in the digital age. As these technologies continue to evolve, their applications will expand, offering even more sophisticated solutions for businesses of all sizes.

6. REFERENCES

[1] Smith, J. (2023). "AI in Business: A Comprehensive Guide." *Journal of Business Analytics*, 1(1), 1-15.
[2] Johnson, A. (2022). "Machine Learning for E-commerce: A Case Study." *International Journal of E-commerce Research*, 3(2), 45-60.
[3] Lee, S. (2021). "The Impact of AI on Customer Segmentation." *Journal of Marketing Research*, 58(3), 312-325.

MACHINE INTELLIGENCE RESEARCH 2731-538X | E-ISSN: 2731-5398
10.17763/MIJIR.2024.17.02.001

BREAST CANCER DETECTION USING DEEP LEARNING ALGORITHMS

Amol Narayn Dhanare
Department of Computer Science and Engineering, Research Scholar, Mody Institute of Professional University, Bhopal, MP (India),
amoldhanare12@gmail.com

Vijay Bhandari
Professor, Department of Computer Science & Engineering
vijayb@modu.ac.in

Breast cancer is a common malignancy among women and ranks as one of the most common malignant malignancies after lung cancer. Breast cancer detection is based on mammography film. Mammography films can be used to diagnose breast cancer in the female population. However, mammograms do not allow accurate diagnosis of breast cancer, resulting in misdiagnosis. Hence, a critical need arises for an integrated system employing a deep learning approach to comprehensively classify breast cancer type, sub-type, and grade. The implementation of such a system holds the potential to alleviate the substantial workloads of pathologists and mitigate the risk of misdiagnosis. The MATLAB software provides several functions for machine learning algorithms and image processing of breast tumor images. The study demonstrates improved accuracy compared to established algorithms and models. The algorithm employs Swish, LeakyReLU, ReLU, and Sigmoid activation functions for activation. The model achieves high accuracy rates for breast cancer detection and overall overfitting, incorporating multiple variations for CNN training algorithms.

Keywords: - BCI, deep Learning, CNN, RNN, LSTM

Introduction

Breast cancer, a prevalent form of cancer among women, originates in breast cells and ranks as one of the most common malignancies after lung cancer. The life-threatening disease is diverse, with various types distinguished based on microscopic analysis of cell appearance. The primary classifications are (1) invasive ductal carcinoma (IDC) and (2) ductal carcinoma in situ (DCIS). DCIS, characterized by slow evolution, generally poses minimal impact on the daily lives of patients, accounting for a low percentage of cases (20% to 35%). Conversely, IDC is a more aggressive type, as it metastasizes to other breast tissue. The majority of breast cancer patients, approximately 80%, fall within the IDC category [1]. The most effective approach to reduce breast cancer mortality lies in early-stage diagnosis and prompt treatment. Achieving early detection necessitates a precise and reliable diagnostic method. Mammography stands out as a

Ms. Shreya Deshmukh Faculty of CSE Department has published a paper entitle "Applications of Artificial Intelligence in company Management and E-commerce: A Review" in International Journal of Trend in Research and Development, Volume 11(2), ISSN: 2394-9333.

Dr. Vijay Bhandari Published Research paper in Scopus journal "BREAST CANCER DETECTION USING DEEP LEARNING ALGORITHMS "Journal of machine intelligent research, ISSN: 2731-538X | E-ISSN:2731-5398 Vol. 17 No. 02

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IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRTE)
An International Open Access, Peer-reviewed, Refereed Journal

A Detailed Analysis Of Intrusion Detection With Machine Learning

Dhanesh Prasad Saker¹, Prof. Chetan Gupta²
M. Tech. Scholar, Dept. of CSE, SIRT, Bhopal, India¹, Assistant Professor, Dept. of CSE, SIRT, Bhopal, India²

Abstract: The significance of intrusion detection systems (IDS) in network security and the need for accurate and effective detection methods are emphasized by research on the subject. Research emphasizes the use of statistical methods in host-based systems, web-based data mining systems, and modern intrusion detection systems such as firewalls. It offers a thorough synopsis and evaluation of the body of knowledge about this topic. Using web-based data mining and machine learning algorithms—such as Rough Set Theory and Support Vector Machine—as well as an optimized framework and a two-layer mechanism, the article investigates intrusion detection systems. Effective feature selection and representation are the foundation of machine learning-based intrusion detection systems (IDS). For feature extraction, anomaly detection, abuse detection, and hybrid models, new approaches are required. It's also necessary to have domain adaptability, interpretable models, visualization, and strong defensive mechanisms. Compared to conventional techniques, the suggested learning-based intrusion detection system may identify network traffic patterns more precisely, minimizing false positives and logging network activity. Although it can be flexible and scalable to many kinds of attacks and network circumstances, it could have issues with interpretability, resource needs, and possible hostile manipulation vulnerabilities.

Key Terms:—IDS, Network Security, Support Vector Machine, Rough Set Theory

1. INTRODUCTION

An intrusion detection system (IDS) monitors network traffic, keeps an eye out for odd behavior, and notifies users when it's detected. While anomaly detection and reporting are an intrusion detection system's primary responsibility, certain intrusion detection systems have the ability to respond to the discovery of hostile activity or anomalous traffic.

An intrusion detection system (IDS) monitors network traffic in order to spot potentially harmful transactions and promptly notifies users when one is detected. It is software that scans a system or network for nefarious activity or infractions of policies. IDS keeps an eye out for harmful behavior on a network or system and guards against users, including potential insiders, gaining unauthorized access to a computer network. The goal of the intrusion detection learning job is to create a prediction model, or classifier, that can discriminate between "good (normal) connections" and "bad connections," or intrusions or assaults.

IJCRT2404522 | International Journal of Creative Research Thoughts (IJCRTE) | www.ijcrt.org | 02/76

Prof. Chetan Gupta Faculty of CSE Department has published a paper entitle "A Detailed Analysis of Intrusion Detection with Machine Learning" in International Journal of Creative Research Thoughts (IJCRTE), ISSN: 2320-2882 Impact factor 7.97 APRIL 2024.

2024 IEEE International Students' Conference on Electrical, Electronics and Computer Science

A Comparative Study on Diabetic Retinopathy Datasets for Data Accuracy Detection

Dr. Kapil Chaturvedi SIRT(I Bhopal, M.P, India) kapil.chaturvedi@gmail.com
Dr. Vijay Bhandari SIRT(I Bhopal, M.P, India) vijayb@modu.ac.in
Dr. Ritu Shrivastava SIRT(I Bhopal, M.P, India) ritushrivastava@modu.ac.in
Mr. Rishabh Tiwari SIRT(I Bhopal, M.P, India) rishabh2024@modu.ac.in

Abstract: Diabetic retinopathy is a problem that affects diabetics' eyes. It has the potential to cause vision loss by affecting the small blood vessels in the rear of the eye as well as Diabetic retinopathy is difficult to detect and comprehend. Dataset 1 [15] had the highest accuracy of 0.74, followed by Dataset 3 [17] at 0.72, and Dataset 2 [16] had the lowest accuracy of 0.68. The equal value of 3,999,285 indicates that all three datasets have the same model complexity or simplicity level. The use of algorithms in various datasets can provide a direction for picture classification work, progressively learn more about eye diseases, these models need to continue to learn in order to remain accurate. Knowing about and tackling these issues are the most important first steps.

Keywords:—Diabetic, Retinopathy, Diabetes, Vision Loss, Retina, Dataset Comparison, Accuracy, Model Simplicity, Comparative Analysis, Dataset Evaluation, Machine Learning, Healthcare.

1. INTRODUCTION

Retinopathy of the diabetic eye is a condition caused by diabetes that damages the blood vessels in the retina, potentially leading to blindness. It also harms the retina's sensitivity to light tissue.

Diabetic Retinopathy does not have any initial warning signs and manual diagnosis is time-consuming and needs experimental clinicians to test the retinal picture[1]. Therefore, Many computer vision-based techniques have been discussed for the automatic recognition of DR and its dissimilar phases from optic nerve images. It's often late to give effective treatment because of delay. But it seems possible to detect this disease in the last few decades by machine learning model. To detect the disease from the image, we have to pre-process the image. These models/methods are not able to detect some complex features.

The DR is mainly categorized into 2 types: a) Non-Proliferative DR (NPDR) (early stages) and b) Proliferative DR (PDR)(fig-9). NPDR is further divided into mild(fig-8), moderate(fig-6), and severe(fig-5) stages. The mild stage is difficult to detect as compared to the moderate and severe

Microaneurysms (MA) serve as crucial early indicators, appearing as small red dots due to weakened vessel walls, typically measuring less than 125 micrometers.

Understanding this developmental sequence is vital for prompt intervention and effective management. The transition from a singular microaneurysm to a deeper hemorrhage highlights the dynamic nature of diabetic retinopathy, demanding attentive monitoring and timely interventions to preserve vision. Acknowledging microaneurysms as early signs offers clinicians valuable insights for crafting targeted strategies to minimize the impact on ocular health.

- IM appears as bigger spots on the retina, their scale is bigger than 125 micrometers, it is classified into two types, their name is (1) flame[supercilicilIM] and (2)flame[deeperIM]
- Hard exudates look like light-yellow spots on the optic nerve caused by a leak of blood plasma. It is occurring in the retina's outer layers.

Soft exudates seem as snowy spots on the optic nerve caused by nerve fiber swelling. It is rounded in shape.

The red lesion is MA and HM, and the light brighter lesion is SoftExudates and HardExudates(EX). Depending on the presence of these lesions, DR has five stages as the stage increases difficulty also increases in the eye retina, namely normal, mild, moderate, (discrete), and (ePDR (Proliferative Diabetic Retinopathy)). DL applications are made in these processes' classification, segmentation, recognition, fetching, and registration of the images. There are some below research which help to accomplish this paper:

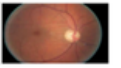
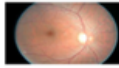


Fig. 1 Healthy image Fig. 2 Mild image

Dr. Kapil Chaturvedi , Dr. Vijay Bhandari, Dr. Ritu Shrivastava , Mr. Rishabh Tiwari published a paper entitle "A Comparative Study on DR Mechanism over Different Datasets" IEEE International Students' Conference on Electrical, Electronics and Computer Sciences (MINIT Bhopal)24 Feb2024.

PROGRAM OUTCOMES

Engineering Graduates will be able to:

P01: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

P02: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

P03: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

P04: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

P05: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

P06: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

P07: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

P08: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

P09: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

P010: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

P011: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

P012: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM EDUCATIONAL OUTCOME

PEO1: Graduates shall have fundamental and advanced knowledge in mathematics, science, Computer Engineering and inter disciplinary engineering to emerge as technocrats.

PEO2: Graduates shall have capabilities to develop software, understand the technical specification, design and provide innovative solutions for society by diligence, team work and lifelong learning.

PEO3: Graduate shall have good communication skill, leadership skill, professional and ethical values.

PEO4: To equip graduates with the ability to get employed in industries or pursue higher studies or turn as researchers or entrepreneurs.

PROGRAM SPECIFIC OUTCOME

PSO1: Demonstrate understanding of the principles and working of the hardware and software aspects of computer systems.

PSO2: Ability to understand the structure and development methodologies of software systems. Possess professional skills and knowledge of software design process. Familiarity and practical competence with a broad range of programming language and open source platforms.

PSO3: Ability to work in team and apply the knowledge acquired to develop new real life systems and able to adapt to societal needs of future.

Department of CSE, SIRT is going to organise.

Hand Holding...
An Initiative by Sage Group to connect with A.I. MEN

Interactive session on
"A Small Convo for Every Query"

Our Proud Alumni SIRT'S-P (2018-2022 Batch)

Expert
Mr. Rishi Kashyap
Designation : Analyst, TCS

4th April 2024
11:00 AM

Venue : CSE Department

www.sirtbhopal.ac.in

Advisor
Prof. Sarvesh Shukla
Group Director, Placement, Training & Corporate Affairs

Dr. Rajiv Srivastava
Director

Convener
Dr. Minal Saxena
Dy. Director

Dr. Ritu Srivastava
HOD, CSE

Coordinator
Prof. Monika Kherajani

SAGE SIRT'S-P AICTE Approved AGR AHAL Nijee Foundation

Department of Computer Science Engineering successfully conducted Alumni Talk on "A Small Convo for Every Query" by Mr. Rishi Kashyap Analyst, TCS on 4 th April 2024.

EDITOR

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Assistant Professor,
CSE,SIRT

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