NEWSLETTER JANUARY | 2026
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Future Frames – The CSE Lens

Seeing the Future Through the Lens of Technology

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In Focus: Technology & Research

Can Artificial Intelligence replace humans?

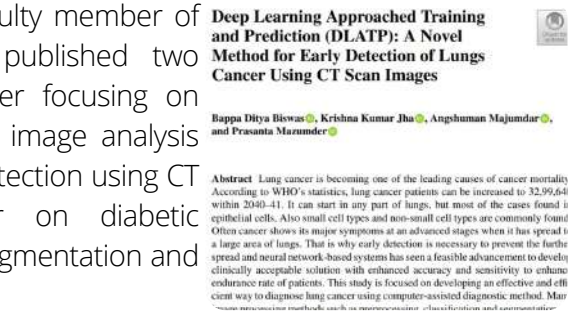
Prof. Satyam Raha
Assistant Professor
Dept. of CSE

Artificial Intelligence (AI) is fundamentally rooted in approximation techniques, making it particularly effective for problems where exact solutions or explicit mappings are difficult to define within reasonable time complexity. By learning from large volumes of examples, AI systems identify patterns through relevant features, much like human learning. Modern deep learning models can autonomously extract and prioritize these features using neural network frameworks.

However, this capability does not imply the replacement of humans. While AI excels at optimizing input–output relationships, it lacks creativity—the distinctly human ability to conceive original ideas, design novel frameworks, and assign meaning beyond data. Even the most advanced AI models generate outputs based on learned patterns rather than genuine originality. Consequently, as long as creativity and innovation remain essential, AI will serve as a powerful tool, not a substitute for human intelligence. Moreover, effective deployment of AI systems requires human judgment to define objectives, ensure ethical use, and interpret outcomes in real-world contexts. Thus, the synergy between human intelligence and artificial intelligence remains central to achieving meaningful and responsible technological progress.

Faculty Publication Highlight

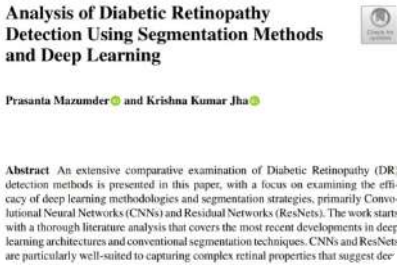
Prof. Prasanta Mazumder, faculty member of the CSE Department, has published two research papers with Springer focusing on deep learning–based medical image analysis—one on early lung cancer detection using CT scan images and another on diabetic retinopathy detection using segmentation and deep learning techniques.



Deep Learning Approached Training and Prediction (DLATP): A Novel Method for Early Detection of Lungs Cancer Using CT Scan Images

Bappa Ditya Biswas, Krishna Kumar Jha, Angshuman Majumdar, and Prasanta Mazumder

Abstract Lung cancer is becoming one of the leading causes of cancer mortality. According to WHO's statistics, lung cancer patients can be increased to 32,99,64 within 2040–41. It can start in any part of lungs, but most of the cases found i epithelial cells. Also small cell types and non-small cell types are commonly found Often cancer shows its major symptoms at an advanced stages when it has spread t a large area of lungs. That is why early detection is necessary to prevent the furthe spread and neural network-based systems has seen a feasible advancement to develo clinically acceptable solution with enhanced accuracy and sensitivity to enhanc endurance rate of patients. This study is focused on developing an effective and effi cient way to diagnose lung cancer using computer-assisted diagnostic method. Mar



Analysis of Diabetic Retinopathy Detection Using Segmentation Methods and Deep Learning

Prasanta Mazumder and Krishna Kumar Jha

Abstract An extensive comparative examination of Diabetic Retinopathy (DR) detection methods is presented in this paper, with a focus on examining the effi cacy of deep learning methodologies and segmentation strategies, primarily Convo lutional Neural Networks (CNNs) and Residual Networks (ResNets). The work starts with a thorough literature analysis that covers the most recent developments in deep learning architectures and conventional segmentation techniques. CNNs and ResNets are particularly well-suited to capturing complex retinal properties that suggest der

These works highlight his significant contributions to AI-driven healthcare research through deep learning–based medical image analysis and early disease detection, and the department sincerely appreciates his valuable role in advancing high-quality, impactful research.

Faculty Paper Presentation Highlight

Prof. Rupali Banerjee presented a research paper at the 1st International Conference on Computational Intelligence and Cyber-Physical Systems (CICPS 2026), held on 2–3 January 2026 at STPI, Kolkata. The department congratulates her on this commendable academic achievement.

1st INTERNATIONAL CONFERENCE ON COMPUTATIONAL INTELLIGENCE AND CYBER PHYSICAL SYSTEMS (CICPS 2026) ON 2nd & 3rd JAN, 2026

Certificate for Paper Presentation

This Certificate is presented to Rupali Banerjee for presenting his/her paper titled

during 1st International Conference on Computational Intelligence and Cyber Physical Systems (CICPS 2026), held on January 2nd & 3rd, 2026, at Software Technology Parks of India (STPI), Kolkata, India.

CICPS 2026 Program Committee congratulates the contributor(s).

DR. SARBANI ROY Program Chair · DR. PARAMITA DEY Program Chair · DR. SUNIRMAL KHATUA Program Chair · DR. SOUVIYA SEN Program Chair

DR. MOHAMED RAWIDEAN MOHD KASSIM Program Chair

Faculty Editorial Contribution

Futuristic Trends in Artificial Intelligence

Volume 3, Book 3, 2024, IIP Series

IIP Series
www.iipseries.org
Iterative International Publishers

Certificate of Recognition

awarded to

Chanchal Ghosh
Assistant Professor
Future Institute Of Engineering and Management

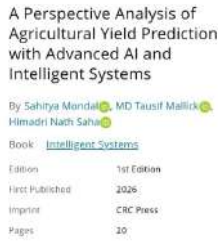
in recognition of an outstanding contribution as an Editor for the edited book titled

Futuristic Trends in Artificial Intelligence Volume 3 Book 3

E-ISBN: 978-93-6252-144-6 Publication Date : 25-February-2024
Print-ISBN: 978-93-6252-630-1 Publication Date : 10-April-2024

Prof. Chanchal Ghosh was recognized as an Editor for the edited book Futuristic Trends in Artificial Intelligence (Volume 3, Book 3), published by IIP Series, reflecting his contribution to contemporary AI research and academic excellence.

📘 Faculty Research Publication



Prof. Sahitya Mondal has authored a book chapter titled "A Perspective Analysis of Agricultural Yield Prediction with Advanced AI and Intelligent Systems", published in Intelligent Systems (CRC Press, 1st Edition, 2026). The department congratulates him on this noteworthy academic contribution.

🏅 Student Achievement Highlights

🏏 Shivam Kumar Thakur, a 2nd-year CSE student, represented the Alpha 11 team in the cricket tournament organized under Xaplotes by Sportivo FIEM and was awarded the Best Batsman Award for his outstanding performance, reflecting his dedication and sporting excellence.

🏸 Neetish Shyamal, 4th year student of CSE Department showcased exceptional performance at Shuttle Cup 2026, organized by Future Institute of Engineering and Management on 30 January 2026, securing 3 trophies and 3 silver medals, bringing pride to the department.

🎓 Student Participation Highlight

Saurabh Suman and Ayush Kumar Choudhary, our first-year students, successfully participated in KASCADE, an event under Kshitij 2026 at IIT Kharagpur. Their participation provided valuable exposure and learning experience, bringing recognition to the department.

🎉 Student Organizational Contribution

Anand Kumar Rai, our 3rd-year student, played a key role in organizing SWAGATAM'25, the Freshers' Welcome Party held on 9 January 2026 at FIEM. The event featured vibrant cultural activities and successfully fostered interaction between seniors and juniors, creating a positive start to the academic journey.

📰 Alumni Speak: Perspectives & Experiences

From Classroom Concepts to Industry-Ready Engineering

Soumyadip Roy
Data Engineer Analyst, Accenture
CSE Alumni (2014–2018)

Classroom code is written to work once, while production systems are built to operate reliably under real-world conditions, handling failures, retries, delayed data, and sudden spikes in usage. Engineers design with scalability, monitoring, and practical trade-offs in mind so software remains dependable beyond demos and assignments. Ensuring data quality is often harder than writing code, as real data is often incomplete, duplicated, or delayed, requiring validation and consistency to maintain trust in analytics and AI systems.

While algorithms emphasize efficiency, real-world systems demand scalability, fault tolerance, and maintainability, with true engineering insight coming from understanding how services, databases, and pipelines interact. Cloud platforms simplify infrastructure but not complexity, and engineers must still manage cost, security, performance, and failures through sound architectural principles rather than relying only on tools. For students, developing this systems-oriented mindset early helps bridge the gap between academic learning and industry expectations. Such industry insights help students better prepare for real-world engineering challenges.

Editors: Trishit Das (2nd Year), Sankhadip Mondal (3rd Year)
Faculty Advisor: Prof. Abhijit Sarkar, Dr. Asif Iqbal Middya