



SHRI SHANKARACHARYA INSTITUTE  
OF PROFESSIONAL MANAGEMENT  
& TECHNOLOGY, RAIPUR



# CYBER TRINITY

presents

A TECH GEEK MAGAZINE

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SSIPMT  
MUJGAHAN RAIPUR



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

# NEWSLETTER

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## VISION

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To create professionally skilled and ethically sound computer engineers to meet the evolving needs of industry and society."

## MISSION

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- To impart quality, innovation-driven education through an effective, outcome-based teaching-learning process.
- To nurture ethical values, creativity and novelty among students to become entrepreneurs and establish start-ups.
- Enhance strong relationship with intellectuals and industries to help learners to remain in touch with latest technologies.
- To encourage students to focus on sustainable solutions to improve the quality of life and the welfare of the society.

# MEMORANDUM



**“Industrial changes building fresh prospects:  
Being vigilant is not only a constructive practice  
but a vital endeavor”**

Racing developments in Present-day tech is bringing revolutionary changes to human lives, surfing through websites or enlisting fragments of data being substituted with a single prompt. Innovating new approaches to traditional daily activities is becoming an everyday occurrence to lives of engineers.

As an Institute of Technology, we pace along the industrial changes with sportsmanship and confidence. Where Motivated Scholars of our institute are ready to take on the world.

**SHRI NISHANT TRIPATHI  
CHAIRMAN, SSIPMT  
RAIPUR**

**“Sustainability is not about surviving  
today, but about ensuring the long run  
still has a tomorrow.”**

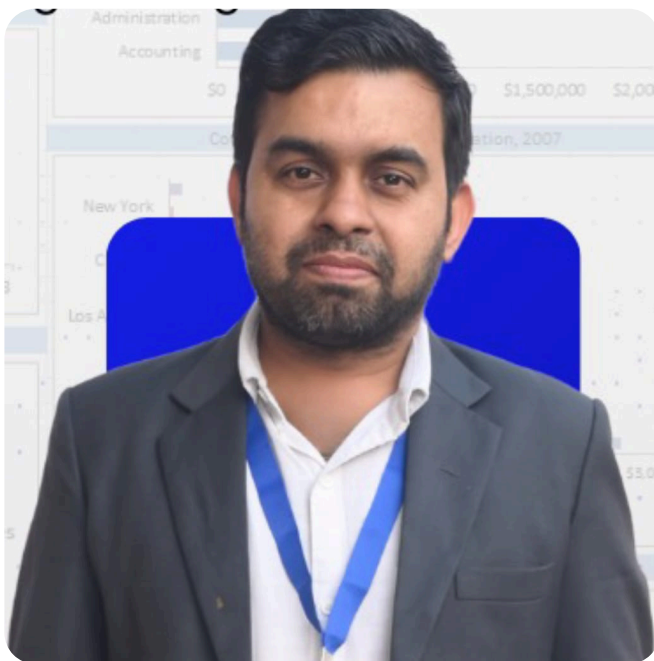
SSIPMT’s primary objective is to deliver quality education that seamlessly integrates strong theoretical foundations with practical knowledge applicable to real-world challenges. Students of our college are well-versed in theoretical knowledge while equally excelling in extracurricular pursuits, effective communication, and overall personality development.

The college has recognised the significance of integrating research activities with academics in order to improve the scholastic standard in teaching and the output quality. Our goal is to cultivate the critical thinking and analytical skills, ensuring graduates are ethical members of the global community.



**DR. ALOK KUMAR JAIN  
PRINCIPAL, SSIPMT  
RAIPUR**

# MEMORANDUM



**MR. VAIBHAV CHANDRAKAR**  
**ASSISTANT PROFESSOR**  
**CSE DEPARTMENT**

**As we navigate the intersection of Neuroscience and Artificial Intelligence, the debate isn't about replacement, but synergy.**

The human brain remains the gold standard for contextual reasoning, emotional nuance, and ethical judgment. However, the biological "hardware" requires rigorous, lifelong training—cultivating deep focus and critical thinking—to remain sharp.

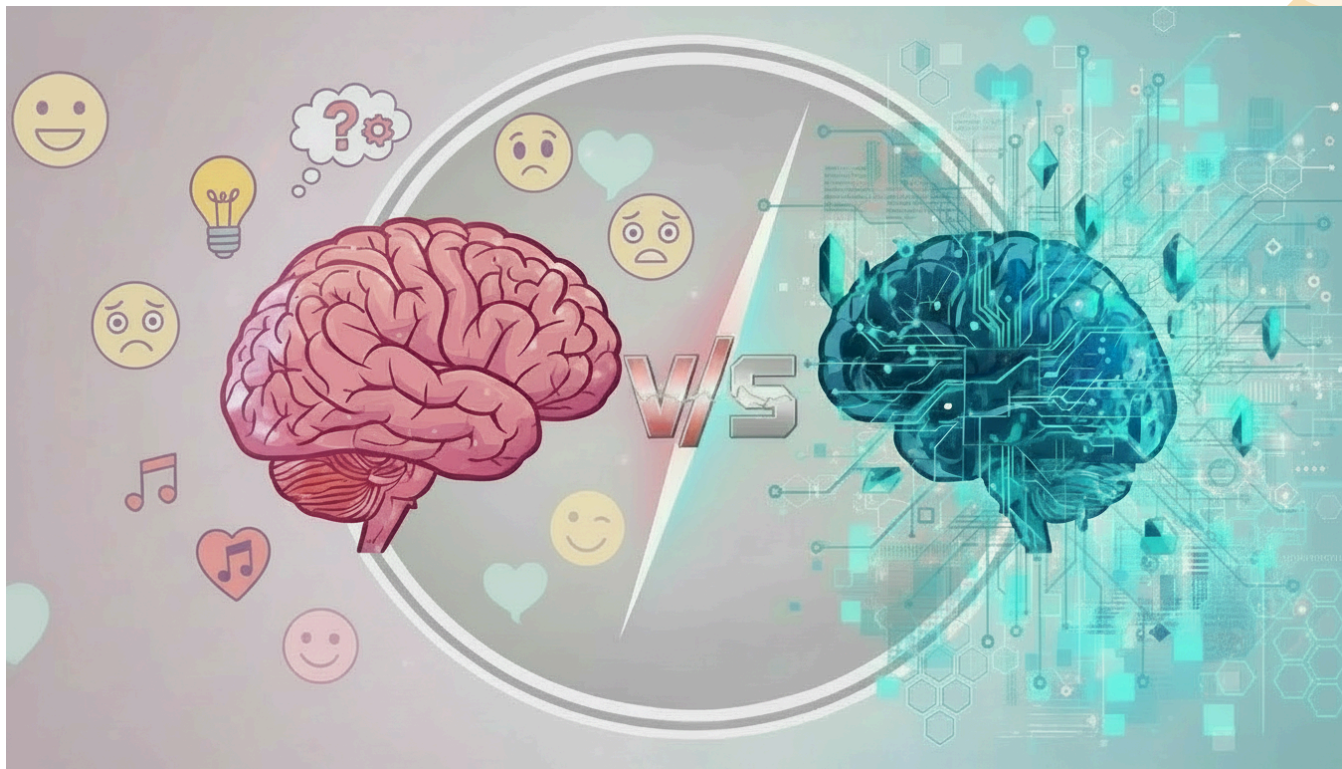
Bots serve as our cognitive exoskeletons, processing vast datasets at speeds impossible for neurons. Their usefulness lies in augmenting our capabilities, handling repetitive tasks, and uncovering patterns. Together, we create a feedback loop: human intuition directs AI precision, while AI efficiency frees the human mind to innovate.

**"Brains Not Bots" as a powerful reminder of the enduring importance of human intelligence in an increasingly automated world**

"Brains, not bots serves as a timely reminder of the crucial importance of human reasoning, empathy, creativity, and ethical judgment in an increasingly automated society. While machines can process data at lightning speed, it is the human brain that asks meaningful questions, connects ideas across contexts, and makes values-based decisions. Progress should be guided not just by algorithms, but by thoughtful minds that understand consequences, innovate with purpose, and place humanity at the center of technology."



**DR. SAPNA SINGH KSHATRI**  
**ASSISTANT PROFESSOR**  
**CSE DEPARTMENT**



### **Brain V/s Bots : The case of human irreplaceability**

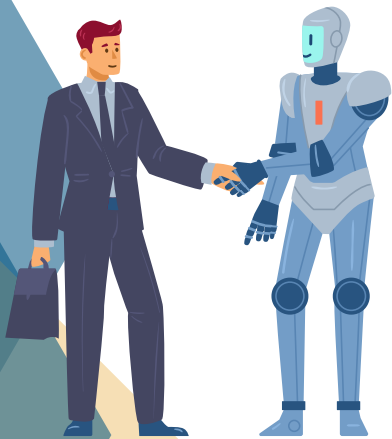
“100 times faster computation”, “biggest Infrastructure possible” were some claims that we began hearing after development and public access of new searching platforms, chatbots, each company was making huge investments, and was head-on claiming its AI power to be superior.

Claims that gained trust of investors, achieved high stock rates and increased company valuation. This claim versus valuation race was a vicious cycle, that trapped companies, as a result, capabilities of Artificial Intelligence were presumed to be more than it is practically possible.

AI promises quicker results, faster outcomes, and reduced human labor. Naturally, Organizations are tempted to think human intelligence as expensive and replaceable. This leads to the idea that machines and AI will take over the human intelligence and work. However, intelligence is more than accuracy and perfectionism. Humans interpret context, understands problems, and question outcomes. If the market solely equates the intelligence with productivity and faster results, they overlook critical human abilities. Which then results into a fine solution over paper but fails in reality.

## Cause of Failure

One of the major reasons of AI system fails is its lack of situational understanding. Artificial Intelligence relies on the predefined algorithms and past data. When the situation changes or moral or emotional judgements are required, the AI struggles without human intervention. Another issue arises that AI cannot fully create new ideas or creative works. Despite the machine learning makes the system to think like a human brain, it is almost impossible to replace human creativity and their vivid complex thinking. AI can still not beat human emotion which flows into their art.



## 2026: The AI Expectation Reset

By 2026, the belief around the AI has begun to slowly shift. Early narration of fully automated systems have met real life complexity. Organization now recognize that the human intelligence is required for the better performance of AI. This expectation reset sparks a new and corrected perspective of AI use along the human intelligence.

## Conclusion

The future requires hand-in-hand relation of technology and human mind. AI does offer the accuracy, efficiency and faster results but it requires human intervention for better outcomes. Human irreplaceability lies in guiding and monitoring the machines. Therefore, human intelligence and machines are interdependent. In this manner, the worlds development can reach its true potential.

# TECH GEEK

## WEB ASSEMBLY: THE FUTURE OF WEB PERFORMANCE

### What is WebAssembly?

It is a binary code format that can be generated from programming language other than JavaScript. It enables software written in languages like C/Cpp to run on web browser giving near native performance without being installed locally. This concept met reality when WebAssembly met the WWW standard. It includes a low-level language similar to assembly that can be represented with text and then converted to binary format that runs on all modern browsers.

For Example, A game build with unity and c#, and then compile it to WebAssembly where it can be delivered in the browser. One of the most popular tools is “encripten” which convert C/C++ to WebAssembly, as it by bringing AutoCAD to web, which is a 30-year-old Code base.

### How to begin working with WebAssembly?

The easiest way to get started is with AssemblyScript, a language that look like TypeScript, but compiles to WebAssembly. WebAssembly is a static-compiled Language. For Example, a number needs to be specified as i32 or f64, we can't use dynamic objects, instead we use map-type Key-Value Pair.

If we want to go from C to WebAssembly, we might use clang, to take us to the intermediate representation. The LLVM can do some optimization on top of that, and end it in a .wasm file.

For any datatype that is more complex we need to put them initially to the WebAssembly Memory.

This Memory is an array buffer. It is just a JS object that simulates heap. The integer that gets passed back and Forth between WebAssembly and language, can be used kind of like pointers into this heap memory.

So, the C code can use this to write to the memory as an address, and JS can use that number to figure out the array index that it needs to pull the value from.

## How Does WebAssembly Make JavaScript Execution Fast?

“It takes less time to download”: Wasm is Faster JS because it is more compact. An equivalent JS in WebAssembly is likely to be Smaller.

“Parsing Takes less time”: JS needs to be parsed from Source to an Abstract - Syntax-Tree and then usually converted into an intermediate representation called ByteCode, that is specific to JS engine running that code.

WebAssembly on the other-hand is already in ByteCode, it just needs to be decoded from binary version, and decoding is faster than parsing.

“compiling Takes less time”: because a lot of it has been done ahead of time before the file was even put up to the server. And the compiler does not have to go between toe optimization to Deoptimization cycle that we do with JIT.



### Current Status and Future of WebAssembly:

WebAssembly (Wasm) is now widely supported across major browsers and expanding beyond the web into serverless, edge, and IoT environments. It boosts performance for compute-intensive tasks and enables multi-language development. Future growth includes enhanced tooling, WASI standardization, GC and multi-threading, and broader full-stack adoption.

## SOFTWARE TESTING IN THE AGE OF AI



Imagine you are a product manager in a software company and you have been tasked to develop a piece of software for a very big client and now the deadline is very near and if you miss it, the project, the hard work and the client, its all gone. Your 80% work is almost done and only one last step is left but that last step is very-very important or may be the most important. That one last step will define or defy the future of this project, of the company, and that is “Software Testing”. Will it be able to stand on the parameters of the real world and can it prove its worth in every situation. And as a project manager you know it’s no way a short process but you are also tight on deadline. Struggling between all of this something amazing clicked your mind. What if software testing is done using “AI”?

Software testing is a very important process in it’s development cycle a long process because based on the feedback of testing many problems, exceptions may be found out which will then be corrected and further testing will be done to check it. Until a satisfied level of readiness is not achieved the testing cycle keeps going on and generally there is no fixed time period of how long it can go.

With generative AI, the level of automation is increasing every single day, doing mundane repetitive tasks easily and even coding, can be a great tool as a software tester for faster effective and time saving execution.

Artificial Intelligence significantly enhances software testing by introducing automation with intelligence. Generative AI analyses requirements, API specifications etc to automatically generate test cases, test scripts, and realistic synthetic test data. It also assists in bug summarization, defect classification, and maintaining traceability between requirements and test cases, thereby improving coverage and reducing manual effort.



Agentic AI extends this capability by acting autonomously. It creates plan, execute, and adapt tests dynamically, explore applications like real users, detect anomalies without predefined rules, self-heal broken scripts when interfaces change, and prioritize regression tests based on risk. This results in faster, smarter, and more reliable testing cycles.

But just like a coin has 2 sides, this powerful tool comes with its own limitations and dangers. AI-driven software testing introduces several technical and ethical challenges. Model accuracy and hallucinations may generate incorrect test cases, reducing reliability. Bias in training data can lead to incomplete coverage or unfair system validation. Over-reliance on AI may weaken human oversight and critical review.

Agentic systems acting autonomously can create unpredictable behaviors or unintended system changes. Data privacy is a major concern when using real production data for training or synthetic generation. Security risks arise if AI tools expose sensitive code or vulnerabilities.

Additionally, accountability becomes unclear when AI-generated tests fail. Organizations must ensure transparency, governance, validation controls, and human supervision.

In high-stakes delivery environments, AI-driven testing is not merely a productivity enhancer but a strategic accelerator. AI introduces adaptive, risk-aware execution that mirrors real-world usage. However, these capabilities must operate within a governance framework that ensures validation, security, accountability, and human oversight.

AI should augment, not replace engineering judgment. When deployed responsibly, it transforms software testing from a time-bound bottleneck into an intelligent quality assurance engine, enabling organizations to meet deadlines without compromising reliability, trust, or long-term product integrity.



# NAVONMESH



Navonmesh is an initiative to promote innovation, interdisciplinary research, and cross-domain collaboration in frontier and emerging areas. It aims to provide a platform for conversation among researchers, students, practitioners and visionaries within academia and industry.



In 2025, Navonmesh continues to curate high-quality conferences, workshops, and research driven initiatives that address real-world challenges, catalyze ethical innovation, nurture ideas and inspire critical thinking. Navonmesh supports global collaboration to ensure that ideas developed in its ecosystem translate to sustainable societal and technological progress





# 2ND INTERNATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE FOR INNOVATIONS IN HEALTHCARE INDUSTRIES (ICAIHI) 2025



The International Conference on Artificial Intelligence for Innovations in Healthcare Industries (ICAIHI) 2025 offers a world-leading international forum to explore how AI is transforming healthcare.



ICAIHI is the world's largest multi-disciplinary conference on artificial intelligence and healthcare. Scheduled for two days, it's a gathering of engineers, data scientists, academicians, industry experts, policy makers and clinicians to discuss leading edge advances in medical imaging, AI-driven diagnostics, clinical decision support, digital health, predictive healthcare and ethical AI, among other topics.



ICAIHI 2025 brings together contributors who produce cutting-edge research, share approaches that really work and suggest future directions.



# NEWSLETTER TEAM



**Mrs. Poonam Gupta**  
Mentor  
CSE Newsletter

We are planning to create a newsletter specifically for students that focuses on the latest technology. The main purpose of this initiative is to keep students updated on emerging trends and innovations in the tech world. By sharing timely information, we aim to spark curiosity and encourage students to explore new ideas beyond the classroom. Additionally, the newsletter will provide learning resources and practical insights that can support their academic growth and career readiness. It will serve as a bridge between theoretical knowledge and real-world applications, helping students remain future-ready in a rapidly evolving digital landscape.

## TEAM HEADS



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