REPORT ON INTERNATIONAL SEMINAR ON EMERGING RESEARCH TRENDS IN COMPUTER SCIENCE 2025 (iSERT-CS 2025)

Date: 12th -13th , March 2025

Department of Computer Science,

St. Anthony's College, Shillong-793001, Meghalaya, INDIA

INTRODUCTION

The International Seminar on Emerging Research Trends in Computer Science 2025 (iSERT-CS 2025) successfully concluded at St. Anthony's College, Shillong, marking a significant milestone in academic collaboration and technological discourse. Held on March 12-13, 2025, this event which is a hybrid mode event brought together distinguished experts and scholars from across the globe to discuss cutting-edge developments in computer science.

KEY HIGHLIGHTS:

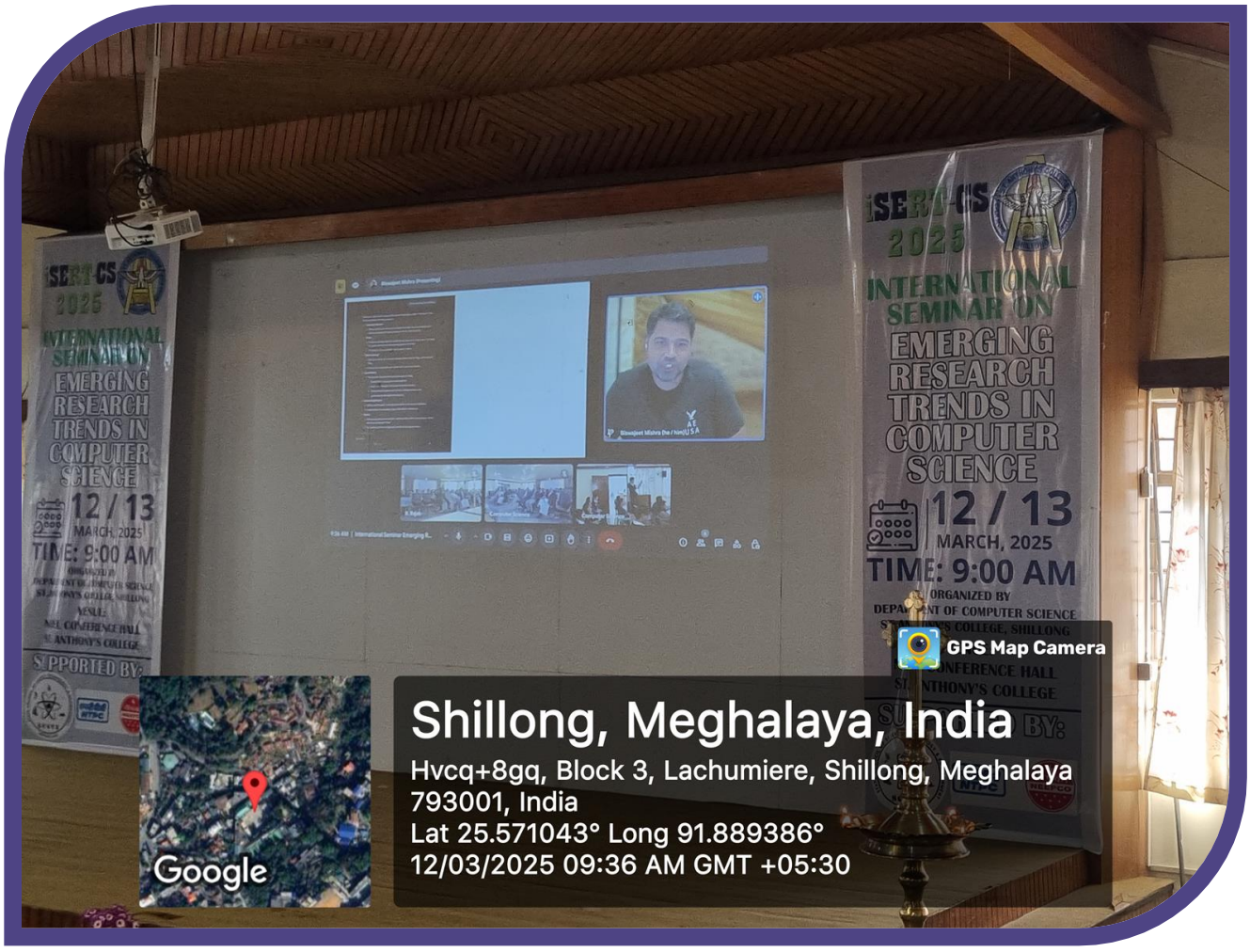
- International and National resourceful speakers from renowned institutions including Google Gemini, USA; Aarhus University, Denmark; University of Colorado, USA; C-DAC Bengaluru, India; IIT Guwahati, India and NESAC-ISRO, Umiam, India.
- Comprehensive coverage of emerging technologies including AI, quantum computing, and space technology.
- Hybrid format facilitating global participation and knowledge sharing.
- Strong focus on practical applications and future trends.

TECHNICAL PRESENTATIONS

1. Large Language Models and Industry Transformation

Speaker: *Mr. Biswajeet Mishra (Google Gemini, USA)*

Mr. Biswajeet Mishra delivered insights on LLMs' revolutionary impact on industry practices, highlighting their evolution from basic autocomplete systems to sophisticated tools capable of complex problem-solving and creative tasks. His presentation emphasized the transformative potential of multimodal models and their applications across healthcare, education, and gaming sectors.



2. AI, Crowdsourcing, and Gamification

Speaker: *Dr. Rajiv Vaid Basaiawmoit (Aarhus University, Denmark)*

Dr. Rajiv Vaid Basaiawmoit presented innovative approaches combining artificial intelligence with crowdsourced solutions. His session demonstrated how gamification platforms like Foldit and Genes in Space have solved complex scientific problems through collective intelligence, highlighting the potential for citizen science initiatives.

3. Quantum Computing and IoT Innovation

Speaker: *Mr. Shrikrishna S. Chippalkatti (C-DAC Bangalore)*

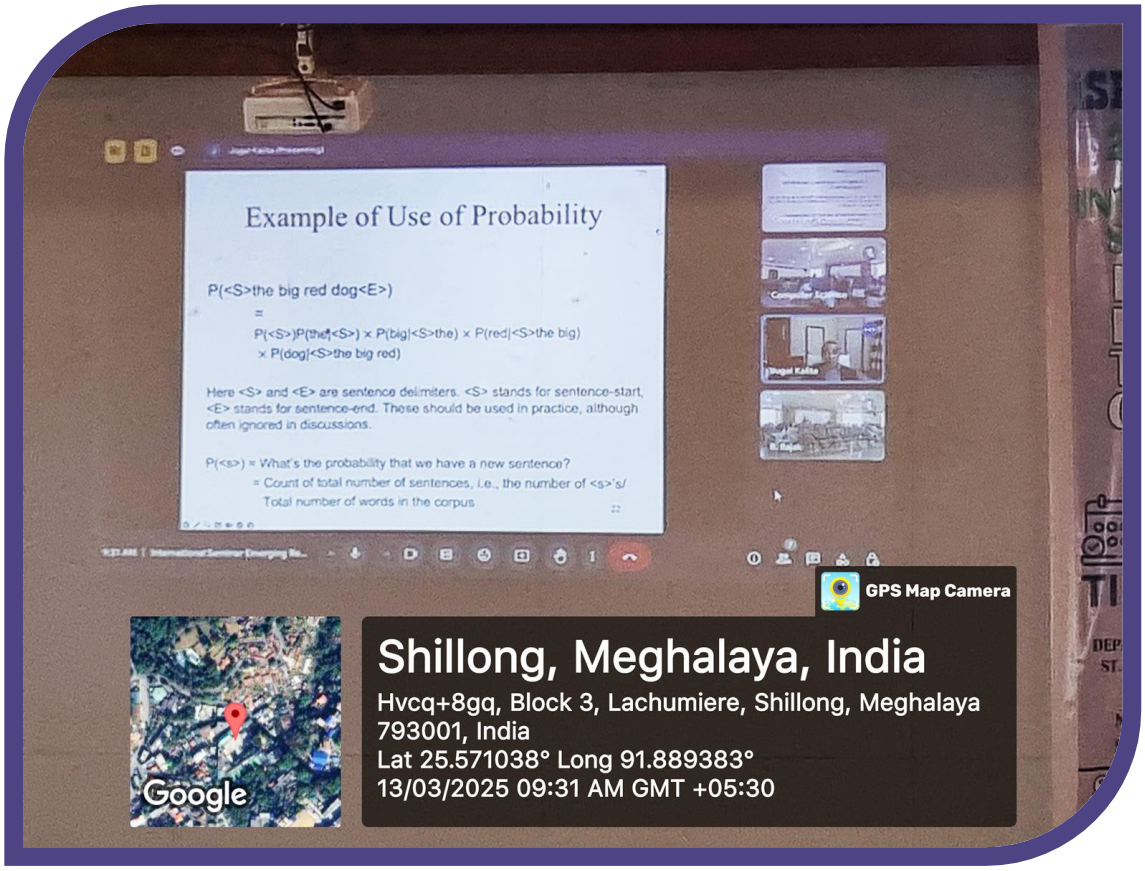
Mr. Shrikrishna S. Chippalkatti detailed India's indigenous technological developments, focusing on:

- Hexa-scale supercomputing initiatives.
- Indigenous microprocessor development.
- IoT research lab innovations.
- Quantum technology advancement programs.

4. Large Language Models: An Introduction

Speaker: *Prof. Jugal Kalita (College of Engineering & Applied Science, University of Colorado, USA)*

Prof. Jugal Kalita recounts his journey through the evolution of language modeling, from ancient grammatical systems to modern neural networks and large language models like ChatGPT. Drawing from his recent lecture. He explored key developments in the field, including rule-based modeling, statistical n-gram models, and the transformative impact of neural architectures–particularly transformers. He also reflect on the applications, benefits, and challenges posed by tools like ChatGPT in educational contexts and beyond. This is not only a technological shift but a cultural and ethical one, demanding critical engagement from educators, researchers, and policymakers alike.



5. AI-Augmented Robotic Neurorehabilitation

Speaker: *Prof. Shyamanta M. Hazarika (IIT Guwahati)*

Prof. Shyamanta M. Hazarika presented groundbreaking work in robotic neurorehabilitation, demonstrating how AI-integrated prosthetic devices and exoskeletons are revolutionizing healthcare. His research showcased the integration of EEG and EMG signals with machine learning techniques for personalized rehabilitation solutions.

6. Space Technology Applications

Speaker: *Mr. Subhash Puyam (NESAC-ISRO)*

Mr. Subhash Puyam highlighted the transformative role of space technology in governance and societal applications, particularly focusing on:

- Disaster management systems
- Environmental monitoring
- AI-driven spatial analytics
- Regional development initiatives

ORGANIZATIONAL EXCELLENCE

The seminar demonstrated exceptional organizational standards under the leadership of Dr. Anjan Das (Convener) and patronage of Fr. Dr. Arcadius Puwein SDB (Principal), St. Anthony's College, Shillong.

The event was supported by State Council of Science Technology and Environment (SCSTE), Meghalaya, and NEEPCO, Shillong, enabling comprehensive coverage of emerging trends in computer science.

Impact and Future Prospects:

iSERT-CS 2025 established St. Anthony's College as a significant hub for technological discourse in Northeast India. The seminar successfully fostered:

- Cross-disciplinary knowledge exchange.
- Industry-academia collaboration opportunities.
- Research networking platforms.
- Future technological innovation pathways.

The seminar concluded with a strong emphasis on continuing research collaborations and technological innovation, setting the stage for future editions and cementing its position as a premier academic event in the region.