



ICAIN-2024

International Conference on Artificial Intelligence and Networking



Organized by
Guru Tegh Bahadur Institute of Technology (GTBIT),
affiliated to
Guru Gobind Singh Indraprastha University (GGSIPU), Delhi
in association with



Portalegre Polytechnic University & Institute of Technology and Business in České Budějovice, Czech Republic
&
Keshav Mahavidyalaya, University of Delhi

24th - 25th September 2024

***** CALL FOR PAPERS *****

SPECIAL SESSION ON

[Computational Frontiers: Advancements in Computer Science and Technology using IoT & ML]

SESSION ORGANIZERS:

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EDITORIAL BOARD: (Optional)

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SESSION DESCRIPTION:

"Computational Frontiers: Advancements in Computer Science and Technology using IoT & ML" is a forward-looking exploration into how the integration of the Internet of Things (IoT) and Machine Learning (ML) is

catalyzing innovation across diverse sectors. This theme delves into the dynamic intersection where IoT's vast network of sensors and devices meets ML's powerful analytical capabilities, facilitating advancements that enhance efficiency, automation, and decision-making processes. The discussion spans various applications, from smart cities and healthcare to agriculture and energy management, highlighting both the current implementations and the immense future potential. It also addresses the crucial challenges of data security, privacy, and ethical considerations, ensuring a comprehensive coverage of this transformative technological synergy. The conference aims to foster an environment of learning, collaboration, and inspiration, setting the stage for pioneering solutions and the next generation of technological integration.

This special session, titled "Computational Frontiers: Advancements in Computer Science and Technology," serves as a nexus for the convergence of groundbreaking research across various domains within computer science and technology. We invite submissions of original papers spanning a wide spectrum of topics, including but not limited to:

Artificial Intelligence (AI): Cutting-edge research in AI techniques, including natural language processing, knowledge representation, reasoning, and planning, as well as advancements in AI applications across various domains.

Machine Learning (ML): State-of-the-art developments in ML algorithms, methodologies, and applications, spanning supervised learning, unsupervised learning, reinforcement learning, and deep learning architectures.

Bioinformatics and Computational Biology: Computational approaches, algorithms, and tools for analyzing biological data, including genomics, proteomics, structural biology, and systems biology, as well as applications in personalized medicine and drug discovery.

Quantum Computing: Innovations in quantum computing hardware, software, algorithms, and applications, addressing challenges in quantum information processing, quantum simulation, cryptography, and quantum machine learning.

Emerging Technologies and Innovations: Novel technologies, concepts, and breakthroughs at the forefront of computer science and technology, including edge computing, federated learning, explainable AI, quantum machine learning, and neuromorphic computing.

This session aims to provide a comprehensive platform for researchers, practitioners, and experts to share their latest findings, insights, and innovations, fostering collaboration and cross-disciplinary exchange in the rapidly evolving field of computer science and technology.

RECOMMENDED TOPICS:

Topics to be discussed in this special session include (but are not limited to) the following:

Topic 1-Introduction to Pattern Recognition: Basic concepts, principles, and applications.

Topic 2-Statistical Pattern Recognition: Techniques based on statistical models for pattern classification.

Topic 3-Machine Learning Algorithms for Pattern Recognition: Supervised learning (e.g., Support Vector Machines, Decision Trees), unsupervised learning (e.g., clustering), and deep learning approaches.

Topic 4-Feature Extraction and Selection: Methods to extract relevant features from raw data and select informative features for pattern recognition tasks.

Topic 5-Image Processing and Computer Vision: Pattern recognition techniques applied to images and videos for tasks like object detection, recognition, and tracking.

Topic 6-Speech and Audio Recognition: Techniques for recognizing and processing speech and audio signals.

Topic 7-Pattern Recognition in Biometrics: Applications of pattern recognition in biometric systems such as fingerprint recognition, iris recognition, and facial recognition.

Topic 8-Pattern Recognition in Natural Language Processing: Analyzing and understanding patterns in text data for tasks like sentiment analysis, text classification, and named entity recognition.

Topic 9-Pattern Recognition in Healthcare: Applications in medical imaging, disease diagnosis, and personalized medicine.

Topic 10-Pattern Recognition in Finance: Predictive modeling for financial forecasting, fraud detection, and algorithmic trading.

Topic 11-Information Retrieval Models: Boolean model, vector space model, probabilistic models, and language models.

Topic 12-Indexing Techniques: Inverted index, forward index, and techniques for efficient indexing of large-scale datasets.

Topic 13-Query Processing and Retrieval: Techniques for processing user queries and retrieving relevant documents or data items.

Topic 14-Evaluation Metrics for Information Retrieval: Measures such as precision, recall, F1-score, and information retrieval effectiveness metrics like Mean Average Precision (MAP) and Normalized Discounted Cumulative Gain (NDCG).

Topic 15-Relevance Feedback and Query Expansion: Methods to improve retrieval effectiveness by incorporating user feedback and expanding user queries.

SUBMISSION PROCEDURE:

Researchers and practitioners are invited to submit papers for this special theme session on **[session name] *on or before* [30th July 2024]**. All submissions must be original and may not be under review by another publication. INTERESTED AUTHORS SHOULD CONSULT THE CONFERENCE'S GUIDELINES FOR MANUSCRIPT SUBMISSIONS at <https://www.icain-conf.com/downloads>. All submitted papers will be reviewed on a double-blind, peer-review basis.

NOTE: While submitting paper in this special session, please specify [**Computational Frontiers: Advancements in Computer Science and Technology using IoT & ML**]atthetop(above papertitle)of thefirstpageofyourpaper.

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