


ICDMIS 2024

**International Conference on Data Mining and Information Security
(ICDMIS 2024)**

Organized by
Eminent College of Management and Technology (ECMT)

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Scientific Innovation Research Group (SIRG), Egypt
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Date: 7th – 8th October, 2024 (Hybrid Mode)

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

SPECIAL SESSION

Deciphering Complexity: Exploring Patterns through Recognition and Information Retrieval

SESSION ORGANIZERS:



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SESSION DESCRIPTION:

Pattern recognition is a field of study in computer science and engineering that focuses on the identification and classification of patterns within data. These patterns can be anything from images, sounds, or textual information to more complex data structures like DNA sequences or financial data. The goal of pattern recognition is to develop algorithms and techniques that enable computers to automatically detect patterns, extract meaningful information from them, and make decisions or predictions based on that information. It finds applications in various domains such as image and speech recognition, medical diagnosis, fingerprint identification, and financial forecasting. And Information retrieval, on the other hand, is the process of obtaining information from a large collection of data, typically stored in various formats such as text documents, images, audio files, or databases. It involves searching, retrieving, and presenting relevant information to users based on their queries or information needs. Information retrieval systems use techniques such as indexing, ranking, and relevance feedback to efficiently locate and retrieve relevant documents or data items from the vast amount of available information. Common examples of information retrieval systems include web search engines, document retrieval systems, and digital libraries.

RECOMMENDED TOPICS:

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

- Introduction to Pattern Recognition: Basic concepts, principles, and applications.
- Statistical Pattern Recognition: Techniques based on statistical models for pattern classification.
- Machine Learning Algorithms for Pattern Recognition: Supervised learning (e.g., Support Vector Machines, Decision Trees), unsupervised learning (e.g., clustering), and deep learning approaches.
- Feature Extraction and Selection: Methods to extract relevant features from raw data and select informative features for pattern recognition tasks.
- Image Processing and Computer Vision: Pattern recognition techniques applied to images and videos for tasks like object detection, recognition, and tracking.
- Speech and Audio Recognition: Techniques for recognizing and processing speech and audio signals.
- Pattern Recognition in Biometrics: Applications of pattern recognition in biometric systems such as fingerprint recognition, iris recognition, and facial recognition.
- Pattern Recognition in Natural Language Processing: Analyzing and understanding patterns in text data for tasks like sentiment analysis, text classification, and named entity recognition.
- Pattern Recognition in Healthcare: Applications in medical imaging, disease diagnosis, and personalized medicine.
- Pattern Recognition in Finance: Predictive modeling for financial forecasting, fraud detection, and algorithmic trading.
- Information Retrieval Models: Boolean model, vector space model, probabilistic models, and language models.
- Indexing Techniques: Inverted index, forward index, and techniques for efficient indexing of large-scale datasets.
- Query Processing and Retrieval: Techniques for processing user queries and retrieving relevant documents or data items.
- 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).
- Relevance Feedback and Query Expansion: Methods to improve retrieval effectiveness by incorporating user feedback and expanding user queries.
- Web Search Engines: Architecture, crawling, indexing, and ranking algorithms used in web search engines like Google, Bing, and Yahoo.
- Personalized Information Retrieval: Techniques for tailoring search results to individual user preferences and context.
- Multimedia Information Retrieval: Retrieval of multimedia data types such as images, videos, and audio.
- Cross-Language Information Retrieval: Techniques for retrieving information across different languages.
- Information Retrieval Applications: Domain-specific applications such as enterprise search, digital libraries, e-commerce search, and recommendation systems.

PUBLICATION AND SUBMISSION PROCEDURE

The conference aims at carrying out double-blind review process. The papers submitted by the authors will be assessed based on their technical suitability, the scope of work, plagiarism, novelty, clarity, completeness, relevance, significance, and research contribution. The conference proceedings will be published in **Springer LNNS Series (Scopus)**.

Submission Link: <https://cmt3.research.microsoft.com/ICDMIS2024>

Submission Deadline: 30th June, 2024

NOTE: While submitting the paper in this special session, please specify [Deciphering Complexity: Exploring Patterns through Recognition and Information Retrieval] at the top (above paper title) of the first page of your paper.

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