IEEE CIS Distinguished Lecture

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School of Engineering & Information Technology

Time: 2pm – 3pm, 5th June 2023

Venue: LT12, Bldg. 32 (LT North), Northcott Drive, UNSW Canberra, ADFA

RSVP at http://tinyurl.com/act-cis-5jun23A.

Artificial Intelligence and Data Science: Current Trends and Future Challenges

Abstract: In this lecture, first we will discuss current trends in Artificial Intelligence (AI). Supervised and unsupervised pattern classification are important Machine Learning (ML) techniques which is an integral part of AI and have wide range of applications. While supervised classification techniques use training samples to obtain the class information of test samples, unsupervised classification partitions the given data set into homogeneous groups based on some similarity/dissimilarity metric. In addition to the fundamentals of ML, we will demonstrate the importance of using Deep Learning (DL), Graph neural network (GNN) and explainable AI. While DL has been used very successfully for image analysis, GNN are being used extensively for unstructured datasets including biological datasets available in the form of graphs containing the interaction between genes, drugs, diseases etc.

In the second part of the lecture, we will focus on the basic issues and challenges in data science, starting with the simple to complex data and finally to the big data. Finally, we will discuss the challenges and future of AI research.

About the speaker: Dr. Ujjwal Maulik is a Professor in the Dept. of Comp. Sc. and Engg., Jadavpur University since 2004. He was also the former Head of the same Department. He also held the position of the Principal in charge and the Head of the Dept. of Comp. Sc. and Engg., Kalayni Govt. Engg. College. Dr. Maulik has worked in many universities and research laboratories around the world as visiting Professor/ Scientist including Los Alamos National Lab., USA , Univ. of New South Wales, Australia, Univ. of Texas at Arlington, USA , Univ. of Maryland at Baltimore County, USA, Fraunhofer Institute for Autonome Intelligent Systems, St. Augustin, Germany, Tsinghua Univ., China, Sapienza Univ., Rome, Italy, Univ. of Heidelberg, Germany , German Cancer Research Center (DKFZ), Germany, Grenoble INP, France, University of Warsaw, University of Padova, Italy, Corvinus University, Budapest, Hungary, University of Ljubljana, Slovenia and International Center for Theoretical Physics (ICTP), Trieste, Italy. He is the recipient of Alexander von Humboldt Fellowship and Senior Associate of ICTP, Italy. He is the Fellow of Indian National Academy of Engineers (INAE), India, National Academy of Science India (NASI), International Association for Pattern Recognition (IAPR), USA, Asia-Pacific Artificial Intelligence Association(AAIA), Singapore and The Institute of Electrical and Electronics Engineers (IEEE), USA. He is also the Distinguish Member of the ACM. He is a Distinguish Speaker of IEEE as well as ACM. His research interest include Machine Learning, Pattern Analysis, Data Science, Bioinformatics, Multi-objective Optimization, Social Networking, IoT and Autonomous Car. In these areas he has published ten books, more than four hundred papers, mentoring several start-ups, filed several patents and already guided twenty five doctoral students. His other interest include outdoor Sports and Classical Music.