



Ashish Ghosh

Professor & former Head, Machine Intelligence Unit
In-Charge, Center for Soft Computing Research
Indian Statistical Institute, India

Topic: **Deep Learning: Auto-encoders**

Abstract:

Autoencoding may be regarded as a type of mapping from one feature space to the same feature space, but via a transformation. These transformations are data specific and the compression is lossy. Despite that, it learns automatically from the examples. The practical applications of autoencoders were rare some time back, but due to the Deep Learning hype, the use of autoencoders found a new meaning. With appropriate hyperparameters, autoencoders can learn data projections that are much more interesting than other feature extraction techniques. It does not require any new engineering and just consists of an encoding and decoding part implemented with neural networks. However, these features extracted by autoencoders are much better than traditional methods. In this talk, we would dive deep into deep learning using autoencoders.

Bio:

Ashish Ghosh is a Professor & former Head of Machine Intelligence Unit and the In-charge of Center for Soft Computing Research at the Indian Statistical Institute, Kolkata. He received the B.E. degree in Electronics and Telecommunication from the Jadavpur University, Kolkata in 1987, and the M.Tech. and Ph.D. degrees in Computer Science from the Indian Statistical Institute, Kolkata in 1989 and 1993, respectively. He is a fellow of West Bengal Academy of Science and Technology. He received the prestigious and most coveted Young Scientists award in Engineering Sciences from the Indian National Science Academy in 1995; and in Computer Science from the Indian Science Congress Association in 1992. He has been selected as an Associate of the Indian Academy of Sciences, Bangalore in 1997.

He has a number of collaborations with different Universities all over the world including Japan, USA, South Korea, China, Germany, Italy, Poland, Hong Kong, Thailand, and The Netherlands.

His research interests include Data Science, Data mining and Big Data analysis, Neural and deep learning, Video, colour, medical and remotely sensed image analysis, Pattern recognition and machine learning, Automatic target recognition, Natural computing, Soft computing, Computational intelligence and related topics. He has already published more than 250 research papers in internationally reputed journals and referred conferences, has

edited 10 books, and is acting as a member of the editorial board/associate editor of various international journals including IET Computer Vision, CAAI Transactions and Sadhana. He served in the capacity of Keynote Speaker, Plenary Speaker, General Chair, Program Chair, Tutorial Chair, and Organizing Chair of many international conferences.

He is a member of the founding team that established the National Center for Soft Computing Research at the Indian Statistical Institute, Kolkata in 2004 with funding from the Department of Science and Technology (DST), Govt. of India; and acting as the Theme Coordinator of Data Science Research initiative of DST, India.