Susmita Ghosh
Department of Computer Science & Engineering
Jadavpur University, Kolkata, INDIA

Topic: **Semi Supervised Learning with Applications**

Abstract:
Availability of labelled patterns is useful for learning. However, if the number of labeled patterns is small (which is true in most real-life applications), then this information may not be sufficient for developing any supervised learning model. In such a scenario, these labeled patterns, though less in number, may be completely unutilized if unsupervised learning is adopted. Under this circumstance, semi-supervised approach can be opted instead of unsupervised or supervised ones.

Semi-supervision uses a small amount of labeled patterns with abundant unlabeled ones for learning, and integrates the merits of both supervised and unsupervised strategies to make full utilization of the collected patterns.

In the present lecture initially an introduction will be given on semi-supervised learning (SSL) and the assumptions needed (e.g., manifold, cluster) to work in this direction. Some SSL methods e.g., self-training, co-training, graph based will be covered. How semi-supervision has been used successfully for improving the performance of clustering and classification will also be touched upon. This will be followed by the applicability of SSL in solving various complex real life problems with special emphasis on change detection in remotely sensed images.

Regardless of its widespread success, semi-supervised learning is not always "hammer to the nail"--- it may not always work well and we have to be very careful while exploiting this concept.

Bio:

Dr. Susmita Ghosh is a Professor, Department of Computer Science and Engineering, Jadavpur University, Kolkata, India. She received the M.Tech.in Computer Science and Engineering from the Indian Institute of Technology, Bombay and the Ph.D. (Engineering) from Jadavpur University, Kolkata. She has visited various academic institutes for collaborative research/ international projects and delivered lectures in different countries. She completed several research projects funded by government agencies of National/ International repute as a Principal Investigator. She serves as Technical/ Programme/ Advisory Committee Member/ Track Chair/ Session Chair of national and international conferences and is an Associate Editor of two International Journals.

Her research interests include Artificial Intelligence, Pattern Recognition and Machine Learning, Data Science and Big Data Analysis, Image and Video Analysis, Cognitive Computing. She has published more than 85 research papers in internationally reputed journals and referred conferences and has edited 3 books. She has a total citations of 1719 with h-index 22 and i-10 index 39 (Google Scholar).