Professor Saman Halgamuge

BIOGRAPHY

Prof. Saman Halgamuge is currently a visiting Professor of Nanyang Technological University of Singapore. He is on sabbatical leave from University of Melbourne where he is a Professor of the Department of Mechanical Engineering and a member of the school wide initiative on Biomedical Engineering.

Saman is the co–author of over 200 research papers, 8 books and 15 book chapters with over 2800 citations and h-factor of 21. In Melbourne, he has completed supervision of 21 PhD students and 5 Masters by Research students. He serves on the editorial boards of 6 journals including ACTA journal on Control and Intelligent systems and BMC Bioinformatics. He has chaired 12 conferences and served as a member of about 70 conference program committees.

Saman leads a research group working on Pattern Recognition and Optimization looking into problems in Biomedical Engineering including Bioinformatics and Sustainable Energy. His research breakthroughs include: highly cited work in Unsupervised Learning and Data Mining, Evolutionary Optimization; and the development of an "artificial brain" that can grow with various levels of experience and articulate learned knowledge as a set of rules.

PRESENTATION AT ACADEMIA SINICA

Title: Learning from Ants, Bees and Fungi: Finding the almost unknown in Biological Data

In the first part, the focus is on "swarm algorithms" that are based on the use of food searching behaviors of ants, bees and fungi like organisms. Examples will be shown on how these algorithms extended by the research group of the speaker are used in various applications including in Bioinformatics. In the second part, the concept and the algorithm development on near unsupervised learning that can find "almost unknown" information in data and its successful application in various biological data analysis problems are discussed. Our collaborative research with colleagues at Academia Sinica on Metagenomics will be highlighted.