

Time and venue changed slightly -- updated version for

AAI Advanced Analytics Seminar Series on 12/04/2012

Seminar Title: Hierarchical fuzzy systems

Speaker: Professor Tom Gedeon, Chair Professor of Computer Science at the Australian National University

Date and Time: 1:00pm to 2:00pm, the 12th of April 2012 (Thursday)

Seminar Room: UTS Blackfriars Campus CC05.GD.01 (5 minutes walk from Tower Building CB01 of UTS)

Street Address: 2-12, Blackfriars Street, Chippendale, NSW 2008

Seminar Chairman: Prof Longbing Cao (longbing.cao@uts.edu.au)

Abstract: Fuzzy expert systems built with linguistic rules (which reflect uncertainty, or vagueness of concepts in natural language) have very wide potential application where human expertise is difficult to express in crisp mathematical form. For real problems many rules are required, which takes too much computing time to solve any but the simplest problems. We are developing techniques to reduce the number of rules required, and to partition them for more efficient computation. This will lead to a much wider range of applications of fuzzy systems, and reduce their computation costs significantly. In this talk I introduce the problem and sketch our overall solution, and discuss extensions to fuzzy interpolation. These extensions guarantee well formed conclusions, which is essential for multi-stage fuzzy reasoning.

Short biography of the speaker: Tom Gedeon is Chair Professor of Computer Science at the Australian National University, and President of the Computing Research and Education Association of Australasia. He is formerly Deputy Dean and Head of Computer Science at ANU. He has worked previously at Murdoch University and the University of New South Wales. His BSc and PhD are from the University of Western Australia. He is a former president of the Asia-Pacific Neural Network Assembly, has been General Chair for the International Conference on Neural Information Processing (ICONIP) twice, has been nominated for VC's awards for postgraduate supervision at three Universities, and serves on a number of journal advisory boards as member, associate editor or editor.

Tom's research focuses on the development of automated systems for information extraction, and for the synthesis of the extracted information into humanly useful information resources (hierarchical knowledge), mostly using fuzzy systems and neural networks, as well as by cognitive modeling based on biologically plausible information flow constraints. Application areas of the research include mining, reservoir characterisation, security and medical applications.

Overview to This Seminar Series

The Advanced Analytics Seminar Series presents the latest theoretical advancement and empirical experience in a broad range of interdisciplinary and business-oriented

analytics fields. It covers topics related to data mining, machine learning, statistics, bioinformatics, behavior informatics, marketing analytics and multimedia analytics. It also provides a platform for the showcase of commercial products in ubiquitous advanced analytics. Speakers are invited from both academia and industry. It opens regularly on every Friday afternoon at the garden-like UTS Blackfriars Campus. You are warmly welcome to attend this seminar series.

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