

Advanced Analytics Seminar Series on 20/04/2012

Seminar Title: Recent Development of Bag-of-feature Model in Visual Recognition

Speaker: Dr. Lei Wang, Senior Lecturer, Faculty of Informatics of University of Wollongong

Date and Time: 1:30pm to 3:00pm, the 20th of April 2012 (Friday)

Seminar Room: UTS City Campus CB10.03.330

Seminar Chairman: A/Prof Jian Zhang (jian.zhang@uts.edu.au)

Abstract: In the past several years, the Bag-of-feature model has achieved great success in visual recognition and become the state of the art. Many new methods and approaches have been proposed, contributing to different components of this model. This presentation covers the fundamentals and the recent development of the Bag-of-feature model in visual recognition. In particular, it focuses on the three key components: codebook generation, coding scheme, and pooling method. For codebook generation, this presentation will briefly review a variety of methods developed so far, including k-means clustering, hierarchical clustering, random forest, information theoretic optimization, and compact codebooks. On coding scheme, we will see the progress from the simplest hard assignment, through soft assignment, to the more advanced sparse coding techniques. For pooling method, this presentation will discuss the sum-pooling and max-pooling, and present the recent effort on understanding the mechanism of max-pooling. Through these, we will experience how the Bag-of-feature model develops out of its initial form and turns out to be an efficient and powerful visual recognition model.

Short biography of the speaker: Dr. Lei Wang received his Ph.D. from School of EEE in Nanyang Technological University, Singapore in 2004. In Jan 2007, he was awarded the Australian Postdoctoral Fellowship by the Australian Research Council. In May 2009, he was awarded the Early Career Researcher Award by Australian Academy of Science and Australian Research Council. He is now a senior lecturer of the Faculty of Informatics of University of Wollongong. His research interests are computer vision, pattern recognition and machine learning. He is IEEE Senior Member.

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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