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University of York - Zhejiang University Cognitive Communications Seminar

Date: Monday 12th - Wednesday 14th April 2010

Venue: Yuquan Campus, Zhejiang University

Organisers: Dr David Grace, University of York (UOY) / Prof Honggang Zhang, Zhejiang University (ZJU)

Purpose

- 1) To gain a better understanding of work underway in both institutions
- 2) To deepen collaboration between UOY – ZJU

Agenda

Monday (April 12)

09:30 Opening Ceremony: welcome and speeches by President YANG Wei (ZJU) and Vice-Chancellor Brian Cantor (UOY), and group photo

10:30 Short walking tour along the West Lake

11:30 Lunch hosted by President YANG Wei (ZJU)

**13:30 Seminars begin: Brief Introductions from attendees
Brief Overview of CogCom Activities at the York and Zhejiang**
- 10 minutes per institution

14:00 Part 1 - Cognitive Bandwidth Assignment and Green Communications
Chair: David Grace (UOY)

Cognitive Radio for Green Communications, Honggang Zhang (ZJU)

Cognitive Bandwidth Assignment Techniques at York, David Grace (UOY)

Geometry-Based Optimal Power Control in Cognitive Radio Networks, Wei Wang (ZJU)

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Round-table discussion: *The Triple-play among the Cognition, Green Spectrum and Interference*

15:30 Break

16:00 Lab Tours and Discussions

17:00 End Seminar Session

Tuesday (April 13)

09:30 Part 2 - Cognitive Networks, including Cognitive Sensor Networks and Cognitive Mesh Networks

Chair: Honggang Zhang (ZJU)

Constraints, Metrics and Intelligence for Cognitive Networks, David Grace (UOY)

Dynamic Spectrum Sensing and Accessing Approaches Based on Filter Bank Techniques, Yun Cui (ZJU)

Round-table discussion: *How will Cognitive Radio Networks Evolve to Cognitive Networks?*

10:30 Break

11:00 Part 3 - Application of Distributed Artificial Intelligence to Wireless Communications

Chair: Tim Clarke (UOY)

Multi-Agent System Approaches, Tim Clarke (UOY)

Spectrum Assignment and Interference Control in Cognitive Mesh Networks by Applying Multiple-agent Q-learning Schemes, Xianfu Chen (ZJU)

Reinforcement Learning in Channel Assignment, Tao Jiang (UOY)

Multi-Agent Reinforcement Learning: State of the Art and Application Potential for Cognitive Communications, Daniel Kudenko (UOY)

Round-table discussion: *What is the Key Role of Learning Processes in Cognitive Radio?*

13:00 Lunch

14:00 Collaboration discussions

(Includes half hour break around 15:15)

York - Zhejiang Joint Lab on Cognitive Radio and Green Communications

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York - Zhejiang Summer School on Cognitive Communications (Sponsored by RCUK, Research Councils of the United Kingdom)

Exchange Visits

WUN CogCom developments (Sponsored by WUN Research Development Fund)

A.O.B.

17:00 End Seminar Session

18:00 Dinner and plenary feedback session at the Shangri La

Wednesday (April 13)

09:30 Continuation of Discussions from Tuesday PM

Collaboration discussions with Dr David Huang (University of Western Australia) and Dr Yonghui Li (University of Sydney)

12:00 End of Meeting

Attendees

University of York

Department of Electronics

Dr David Grace (dg@ohm.york.ac.uk), Head of Communications Research Group, Dept of Electronics

Mr Tim Clarke (tc@ohm.york.ac.uk), Intelligent Systems Research Group and Deputy Head of Dept of Electronics

Mr Tao Jiang (tj511@ohm.york.ac.uk), Communications Research Group, Dept of Electronics

Department of Computer Science

Dr Daniel Kudenko (daniel.kudenko@cs.york.ac.uk)

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Additional Attendees

Dr David Huang, University of Western Australia, Australia
Dr Yonghui Li, University of Sydney, Australia
Dr Shugong Xu, Huawei Research Labs (Shanghai)

Note: