Classifier ensembles for fMRI classification

Invited lecture of Prof. Ludmila Kuncheva

School of Computer Science, Bangor University

27th October 2010 (Wednesday)

P302, Poole House, Talbot Campus, 4pm–5pm

Wrapped in mysticism and superstition in the past, "mind reading" is now raising new scientific horizons beside ethical debates. Functional magnetic resonance imaging (fMRI) is currently the most advanced technology at the disposal of cognitive neuroscience. It measures blood oxygenation level-dependent (BOLD) signal and tries to discover how mental states are mapped onto patterns of neural activity. Feature selection and classification of fMRI data is still a formidable analytic challenge even for the state-of-the-art pattern recognition and machine learning. This talk will explain the main difficulties and approaches in fMRI data analysis. We will look at how classifier ensembles can be used for this problem. Results from an experiment will be presented, which favour the Random Oracle ensembles and Random Subspace ensembles for fMRI classification.

Prof. Ludmila Kuncheva

Ludmila Kuncheva received the MSc degree from the Technical University of Sofia, Bulgaria, in 1982, and the Ph.D. degree from the Bulgarian Academy of Sciences in 1987. Until 1997 Dr Kuncheva worked at the Central Laboratory of Biomedical Engineering at the Bulgarian Academy of Sciences. She is currently a Professor at the School of Computer Science, Bangor University, UK. Her interests include pattern recognition and classification, machine learning, classifier combination and fMRI data analysis. She has published two books and above 150 scientific papers.

For more information about lectures please contact: Kate Musial (kmusial@bournemouth.ac.uk) or Melanie Coles (mcoles@bournemouth.ac.uk)