

Please join us on Thursday, October 3, 2013 for the Seminar by Dr. Tulay Adali.

Data-Driven Analysis and Fusion of Medical Imaging Data

Data-driven methods such as independent component analysis (ICA) have proven quite effective for the analysis of functional magnetic resonance (fMRI) data and for discovering associations between fMRI and other medical imaging data types such as electroencephalography (EEG) and structural MRI data. Without imposing strong modeling assumptions, these methods efficiently take advantage of the multivariate nature of fMRI data and are particularly attractive for use in cognitive paradigms where detailed a priori models of brain activity are not available.

This talk reviews major data-driven methods that have been successfully applied to fMRI analysis and fusion, and presents examples of their application for studying brain function in both healthy individuals and those suffering from mental disorders such as schizophrenia.

Tülay Adali received the Ph.D. degree in electrical engineering from North Carolina State University, Raleigh, in 1992 and joined the faculty at the University of Maryland Baltimore County (UMBC), Baltimore, the same year where she currently is a Professor in the Department of Computer Science and Electrical Engineering. She has held visiting positions at École Supérieure de Physique et de Chimie Industrielles, Paris, France, Technical University of Denmark, Lyngby, Denmark, Katholieke Universiteit, Leuven, Belgium, and University of Campinas, Brazil.

Prof. Adali assisted in the organization of a number of international conferences and workshops including the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), the IEEE International Workshop on Neural Networks for Signal Processing (NNSP), and the IEEE International Workshop on Machine Learning for Signal Processing (MLSP). She was the General Co-Chair, NNSP (2001--2003); Technical Chair, MLSP (2004--2008); Program Co-Chair, MLSP (2008 and 2009), 2009 International Conference on Independent Component Analysis and Source Separation; Publicity Chair, ICASSP (2000 and 2005); and Publications Co-Chair, ICASSP 2008.

Prof. Adali chaired the IEEE Signal Processing Society (SPS) MLSP Technical Committee (2003--2005, 2011--2013), served on the SPS Conference Board (1998--2006), and the Bio Imaging and Signal Processing Technical Committee (2004--2007). She was an Associate Editor for IEEE Transactions on Signal Processing (2003--2006), IEEE Transactions on Biomedical Engineering (2007--2013), IEEE Journal of Selected Areas in Signal Processing (2010-2013), and Elsevier Signal Processing Journal (2007--2010). She is currently serving on the Editorial Boards of the IEEE Proceedings and Journal of Signal Processing Systems for Signal, Image, and Video Technology, and is a member of the IEEE SPS MLSP and Signal Processing Theory and Methods Technical Committees.

Prof. Adali is a Fellow of the IEEE and the AIMBE, recipient of a 2010 IEEE Signal Processing Society Best Paper Award, 2013 University System of Maryland Regents' Award for Research, and an NSF CAREER Award.

She is an IEEE Signal Processing Society Distinguished Lecturer for 2012 and 2013.

Her research interests are in the areas of statistical signal processing, machine learning for signal processing, and biomedical data analysis.