ISE 599: Engineering Approaches to Music Perception and Cognition

Spring 2004  
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Section: 048-35145D  
Day: Thursday 6:30-9:20pm (negotiable at first meeting)  
Location: PHE333

Text: Selected technical papers from current literature  
Website: http://www-classes.usc.edu/engr/ise/599muscog

Pre-requisites: Graduate standing in engineering or by instructor’s consent.  
Programming experience (C++ or Java) desirable.

The course will be approved for credit towards the MSIMS and MSEE (MCT) and possibly for the MSCSCI (MCT) degrees. It will be cross-listed in the 2004-5 schedule as ISE 575 / EE 675. Cross-listing with CS in process.

This course surveys computational research in music perception and cognition. Information processing by humans serves as a basis for improving human-computer interaction in music information systems. The topics include basic concepts of music perception and cognition, computational methods for abstracting and extracting pitch and time structures, pattern and style recognition, expression synthesis, analysis and interpretation. Students will gain hands-on experience by implementing selected algorithms from the surveyed literature. The implementation projects will provide computational practice in music analysis, segmentation, synchronization and retrieval.