Seminar in Scene Analysis
CMSC 828J, NACS 728X
Spring, 2008, BPS 1142, Mondays 3-5:30 p.m.
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A central goal of this seminar is to provide a forum for interaction among students and faculty with an interest in auditory and visual scene analysis. We will approach research problems in scene analysis by discussing computational, psychophysical and neurobiological papers. In both vision and audition, scene analysis impacts many real-world problems. Examples include understanding how we build three-dimensional models of the world; how we locate objects in scenes; and how we recognize objects, events or speech. Moreover, both visual and auditory scientists are concerned with how representations of space are built and used in the brain, and how these can be tied to action. Segmentation of sensory input into separate sources is critical to visual and auditory perception of the world, and may be accomplished by similar systems. The modeling of auditory and visual scene analysis can be approached using similar computational tools, with opportunities to develop new hypotheses about perceptual processes by connecting the two.

This seminar will be run as a workshop that emphasizes critical analysis of original research articles on selected topics in the field of scene analysis. Auditory and visual scientists who work on problems in scene analysis will be invited to present their research and perspectives and to participate in discussions. Students are expected to read research articles every week, make presentations on research articles, contribute to weekly discussions, complete a take-home midterm, and prepare a written final research proposal on a relevant topic. Specific topics covered may include stereo processing in vision and audition, perceptual grouping, blind source separation, object and speech recognition, etc.

Note: this course will *not* count as an MS or PhD qualifying course for CS grad students.