BIOENGINEERING & BIOMEDICAL ENGINEERING RESEARCH SEMINAR

ENGINEERING OF TECHNOLOGIES TO IMPROVE THE LIVES OF PEOPLE LIVING WITH VISION LOSS

Prof. Jeremy Cooperstock
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Jeremy Cooperstock is a professor in the department of Electrical and Computer Engineering, a member of the Centre for Intelligent Machines, and a founding member of the Centre for Interdisciplinary Research in Music Media and Technology at McGill University. He directs the Shared Reality Lab, which focuses on computer mediation to facilitate high-fidelity human communication and the synthesis of perceptually engaging, multimodal, immersive environments. He led the development of the Intelligent Classroom, the world's first Internet streaming demonstrations of Dolby Digital 5.1, multiple simultaneous streams of uncompressed high-definition video, a high-fidelity orchestra rehearsal simulator, a simulation environment that renders graphic, audio, and vibrotactile effects in response to footsteps, and a mobile game treatment for amblyopia. Cooperstock's work on the Ultra-Videoconferencing system was recognized by an award for Most Innovative Use of New Technology from ACM/IEEE Supercomputing and a Distinction Award from the Audio Engineering Society. The research he supervised on the Autour project earned the Hochhausen Research Award from the Canadian National Institute for the Blind and an Impact Award from the Canadian Internet Registry Association, and his Real-Time Emergency Response project won the Gold Prize (brainstorm round) of the Mozilla Ignite Challenge.

Development of accessible technologies to support the daily living experience of individuals who are blind or have low vision is a challenging task, requiring an understanding of the varied needs of this community, awareness of technical limitations of the underlying systems employed, and careful attention to questions of user experience. In brief, there is much more to a successful implementation than connecting a sensor to a machine learning inference engine. This seminar provides an overview of these issues in the context of several recent and ongoing projects in which our lab has been engaged, working on systems to aid in situational awareness (Autour), guidance ("walking straight"), and understanding of web content (IMAGE)

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