



Rochester Joint Chapter of the IEEE Computer and Computational Intelligence Societies



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presents

Guiding Attention in Controlled Real-World Environments

by

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Time: 6:00 p.m. to 8:00 p.m. (Social & Refreshments at 6 pm, Speaker at 6:30 pm)

Location: RIT Campus, Golisano Hall - Bldg 70, Room 1445

Computer Society announcements and venue information:

<http://ewh.ieee.org/r1/rochester/computer>

Cost: Free. Open to IEEE members and non-members.



Abstract

The ability to direct a viewer's attention has important applications in computer graphics, data visualization, image analysis, and training. Existing computer-based gaze manipulation techniques, which direct a viewer's attention about a display, have been shown to be effective for spatial learning, search task completion, and medical training applications. In this work we extend the concept of gaze manipulation beyond digital imagery to include controlled, real-world environments. We address two main challenges in guiding attention to real-world objects: determining what object the viewer is currently paying attention to, and providing (projecting) a visual cue on a different part of the scene in order to draw the viewer's attention there. Our system consists of a pair of eye-tracking glasses to determine the viewer's gaze location, and a projector to create the visual cue in the physical environment. The results of a user study show that we can effectively direct the viewer's gaze in the real-world scene. Our technique has applicability in a wide range of instructional environments, including pilot training and driving simulators.

Speaker's Biography

Reynold Bailey is an Assistant Professor in the Department of Computer Science at Rochester Institute of Technology. He received his Masters and Ph.D. from Washington University in St. Louis. His research interests are in the field of computer graphics and include non-photorealistic rendering and applied perception in graphics and visualization. Reynold's publications have appeared in the leading journals on computer graphics as well as several international conferences. Reynold has several ongoing collaborations with other faculty in the Computer Science Department to explore the use of eye-tracking technology for content-based image retrieval and visualization of large multidimensional data sets. Reynold teaches a variety of courses ranging from introductory computer science to graduate courses in computer graphics. In addition to these academic pursuits, Reynold is actively involved in recruiting and mentoring underrepresented students at both the graduate and undergraduate levels.