Abstract

Eye movements are tied to specific tasks or strategies, so monitoring those movements can provide a valuable insight into our methods of perception. Taking advantage of this window, scientists have done eye tracking experiments in an attempt to characterize our visual perception of the world around us. Many eye trackers are laboratory based and immobile. The Visual Perception Lab at RIT utilizes portable monocular eye trackers developed within the lab. While tracking one eye provides good data to examine our vision and scene perception, humans are equipped with two eyes, which provide clues we use in our world in addition to those gathered by only one eye. By observing both eyes using the portable eye tracking system we are attempting to look at these additional clues. Researchers have found interesting differences when using binocular eye tracking versus monocular eye tracking. These new observations often occur in a laboratory setting within defined parameters; it has been shown, however, that well-constrained experiments may tell more about the constraints than about the properties being observed. Using the portable binocular eye tracker, the observations found in laboratories can now be tested in the real world. The data that is gathered was specifically analyzed in detail for version and vergence movements, with special detail given to the vergence observations.

About the Author

Steve Broskey is a fourth year undergraduate studying Imaging Science at the Rochester Institute of Technology in Rochester, NY. After he graduates with his undergraduate degree in the spring of 2005, Mr. Broskey intends to secure a full time job for the summer of 2005 in a leading corporation and then return to RIT to continue his studies toward a Masters of Imaging Science. The concepts used in his project originated from the Visual Perception Lab, headed by Dr. Jeff Pelz. Dr. Pelz also served as the advisor for this project.