Cybersickness Prioritization and Modeling

By: Lisa Rebenitsch

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Where: 3105 Engineering Building

Abstract:
Motion sickness due to visual stimuli, or cybersickness, is a topic of public concern. From three-dimensional movies to displays such as Oculus Rift, the public is being offered more opportunities which carry a risk of cybersickness. The intent of this thesis is to prioritize cybersickness human factors and develop models to predict effects. A thorough search of the literature is presented. New experimentation is done where the literature does not provide sufficient evidence. Factors that have sufficient support are fitted to single-term models for use in guidelines. Cumulative models created explain 37% of the adjusted variance for the individual and 55-70% for the hardware and software. Since variances are not purely additive, the total variance explained is likely 70-80% which is a significant improvement over Kolasinski's model with 34% variance. The model created using experimental results using the individual, hardware and software has an average absolute residual of less than 1%.