Exploring the use of multi-wall immersive environments in early design decision making

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Need and Industrial Relevance

Research Thrust Area:
Visualizing and Virtual Prototyping
Project Goals

- Investigate the different characteristics of multi-wall and single-wall immersive environments as they impact use in early design decision making.
Objectives

- Determine if working in an immersive environment with one wall is more likely to induce cybersickness than working in a multi-wall immersive environment when performing a given task.
Approach and Methods

- Design a user study, with a foundation in existing research addressing the causes of cybersickness.
- Constants include the instructions, task, software and hardware.
- Variable will be the number of projections surfaces.
Approach and Methods

- Participants will be recruited from the student body and our industry partners.
- Statistical analysis of the results will inform our conclusions.
Outcome/Deliverables

- A final report which includes a description of the study, a description of the participants, the results and a discussion of the results.
Impact

- The potential for cybersickness can reduce the effectiveness of using immersive technology in product design. A better understanding of how the projection screen configuration affects cybersickness will inform future industry purchases of immersive projection screen technology.
Project Duration & Proposed Budget

- **12 month duration**
  - Q1: Literature review, design of the study, submission of the Institutional Review Board forms, pilot study
  - Q2: Recruitment of participants, conduction of the study, data gathering
  - Q3: Data analysis
  - Q4: Data interpretation, report writing, presentation preparation and delivery

- **$40K for graduate student stipend and tuition and undergraduate hourly wages**