Name of Project: Gameday MR

Abstract:
Students on this team will develop a first-of-its-kind application for existing off-the-shelf Mixed Reality headsets from Microsoft (https://www.acer.com/ac/en/US/content/series/wmr). The application will allow individuals (such as patients at CS Mott Children’s Hospital) who cannot attend a sporting or live event in person to ‘virtually’ experience the excitement of a sporting event via augmented/mixed reality. Students will leverage best practices in contextual design to understand the needs and desired experience of their end user.

Scope:

**BASELINE GOAL (expected in April)**
Students will utilize rapid prototyping to develop a working system for a single client at remote site, allowing them to experience the sights and sounds of sporting event in ‘almost’ real-time. Client is in passive observation mode.

**End of Project Expected Delivery:**
What is the polished/functionality the students should plan time to add?
Students will develop multiple use cases highlighting the range of possibilities for Mixed Reality in a gameday atmosphere that can be feasibly rendered with this technology. Students will deploy the best possible rendering of a real-time sporting event at UM in Fall 2019.

**HIGH SUCCESS Stretch Goals**
Multiple clients at remote site experiencing and participating in sights and sounds of sporting event in ‘near’ real-time. Clients are in active, participatory mode and are able to communicate with surrounding, similar clients (at remote site) and also with ‘actor’ who is physically attending sporting event; Students will be expected to publish a whitepaper on the “what’s possible” with the technology in this space, highlighting technical successes and noble failures.

**Student Skills:**
MDP Sponsored Projects are both a professional and academic learning experience for students. By participating in this program, students are actively preparing for graduate school and a professional
career. As part of the experience, MDP expects professional behavior. To best prepare you for future professional opportunities, your experiences on this MDP team will be very broad. In addition to key technical skills that you will bring to the team, you will engage deeply in the self-directed learning of new and important concepts, demonstrate flexibility, collaboration, and cooperation, and develop strong professional communication skills. This also means that you will need to be able to work outside of your traditional area of study in the true multidisciplinary nature of our projects. You will not always be able to anticipate how your skills and expertise will be used, so the MDP Sponsored Project will challenge you to grow and develop as a professional.

**Project Areas**

<table>
<thead>
<tr>
<th>Project Areas</th>
<th>Key Skills and/or Knowledge</th>
<th>Likely Majors</th>
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</thead>
<tbody>
<tr>
<td>Programming (2-3 students)</td>
<td>Interest in Mixed Reality/Virtual Reality, interest or experience programming in UNITY development environment.</td>
<td>Computer Science (CSE/CS-LSA), Any</td>
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<tr>
<td>Video and Environment Capture (1-2 students)</td>
<td>Demonstrated skills in film creation and editing, 3D animation, interest or experience in video game production, Mixed Reality/Virtual Reality</td>
<td>Computer Science (CSE/CS-LSA), SMTD-PAT, Screen Arts &amp; Cultures, Any</td>
</tr>
<tr>
<td>Database Design (1-2 students)</td>
<td>Interest in Mixed Reality/Virtual Reality, designing databases in UNITY development environment.</td>
<td>Computer Science (CSE/CS-LSA), Information (SI)</td>
</tr>
<tr>
<td>User Interface / User Experience (1-2 students)</td>
<td>Interest in Mixed Reality/VR UX, Human factor design, visual perception</td>
<td>School of Information, Art &amp; Design (with EECS 183), Industrial and Operations Engineering, PSYCH</td>
</tr>
</tbody>
</table>

**Additional Desired Skills/Knowledge/Experience**

Any of the following Skills, Knowledge or Experience would be valuable to the 2019 team. We don’t expect students to be familiar all or even most of these items, but strong candidates will have familiarity or experience with some of them and a positive attitude to learn what is
necessary as the project gets underway. Please highlight your experience with any of the items on this list in your personal statement on the application.

- Interested in live sports
- Interest from Mott in helping children “experience attending a sporting event” directly from their hospital bed.
- Willingness and excitement to fail early and fail often
- **Experience with Microsoft Visio, Microsoft Layout**
- Sophisticated video editing skills
- **Interest or experience in video game production**

**Location:**

Project work will take place on north campus.

**Faculty Mentor**

Prof. David Chesney

EECS

**Legal Requirements:**

Citizenship Requirements (please select)
This project is open to all students regardless of citizenship status

Intellectual Property Agreements / Non-Disclosure Agreement Requirements (please select)
Students will sign the standard MDP IP/NDA agreement to the University of Michigan

**Company Information:**

General information about your company and own work group (from your website, or similar)