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EE 496 Project Proposal - AR Campus Tour/Campus Map/Campus Directions

Problem:
The University of Hawaii at Manoa has an enrollment rate of 30% for 2017 of those admitted. Whereas as some of the top public universities have enrollment rates of those admitted around the 40%-45% range. Some of these universities include Berkeley, University of Michigan and the University of Virginia.

Vision:
The integration of Augmented Reality (AR) or even Virtual Reality (VR) into the admissions process such as AR campus tours or VR campus overviews could potentially mitigate some of the high costs that is required to visit the campus of the University of Hawaii at Manoa for students in the mainland.

The AR campus tours could provide a more interactive and personal campus tour. Campus amenities such as cafeteria menu or showcase the food for the cafeterias/restaurants on or around campus could be appealing to those interested in good food. Showing university sports highlights to athlete of their given sports would likely appeal to them. Or showing some of the internal facilities such as the labs or the LAVA room to scholars interested in the sort would likely have a much different experience than the current campus tour.

Students would also have the ability to leave comments, ratings and real feedback that could be visible to those on the campus tour in order to give realistic expectations and ideas of what campus life is really like.

Hawaii has a rich history and culture that is difficult to show without the use of AR (because not much of it remains) but can be explained through this process which could appeal to many. It is a prideful thing for many students to stay home and graduate from the University of Hawaii at Manoa, potentially where many of their own families members graduate themselves.

Virtual Reality could play a role in those who cannot afford the cost or the risk to fly to the University of Hawaii from the mainland. VR would let them transcend the distance and perhaps get a similar experience to the AR tour.

The kind of information that could be translated through a VR overview is the layout of the campus and its surroundings, the scale of the campus, and other big picture ideas that may be difficult to portray otherwise.

Benefits:

An AR/VR solution would offer a low-cost, consistent and personalized experience for those thinking about attending the University of Hawaii at Manoa. This software could be maintained as well, updated with new information (or ensure that information stays up to date and current).

The cost and hassle of having to schedule a tour guide can be remedied by having an AR solution that families and students touring the campus could enjoy at their own pace and at their own time. When in large group, it is difficult to please everyone's different agenda, some wanting to go faster than other or wanting to see different things.

Many times they have questions they may be too hesitant to ask in front of a large group and an AR solution would likely have the ability for questions to be asked to an admissions expert for near-real time answering.

Someone's campus tour experience may be impacted by the individual giving the tour itself, however an AR experience would provide a consistent experience, independent of a tour guide who may have had a bad day, etc.

The experience could be personalized based on declared interests or intents such as athletics or academics, etc. An AR tour could also highlight more points and things around campus than a campus tour guide could remember on their own.

Deliverables:

Our initial use case would be interacting with the Gate of Hope (Holmes Hall's statue). This involves recognizing the geometry of the statue or using other localization techniques to overlay information, videos, or other forms of interaction for the user.

We envision an enhanced experience that will captivate the user as compared to a normal campus tour or looking at a pamphlet for information. Augmented reality is being able to interact with the world while overlaying a digital display and we want to be able to take that concept and apply it to this project.

Success Criteria:

Stretch Goals: Provide two interactive experiences in two different locations. Interactions could include leaving a comment, watching a video, or something more fun and light-hearted. We plan our first experience to be the Gate of Hope at Holmes Hall. We plan our second experience to be the Fourth Sign at the Art Building.

Semester Goals: We want our experience to include 3D assets such as signage, avatars, and videos/pictures surround the Gate of Hope at Holmes Hall. We want our users to be able to interact, leave feedback, etc.

We can break up our project into two separate goals, the first being able to recognize that we are in front of the statue, using either geometric recognition or localization. The second part of our project will involve us creating assets, displaying information and allowing the user to interact.

Deadlines/Plan/Approach:

Deadline: TBA
Plan: TBA
Approach: TBA

Cost/Budget:
$2000 msi gaming laptop
$100 Hololens Emulator + Windows Pro
$3000 Hololens (given)