Submit Grant Proposal | VR@Illinois

Submitted by:
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1. Name
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3. Your Status
Faculty

4. Your Department
Computer Science

5. Provide a brief summary of the VR/AR project that would be funded by this grant proposal
Augmented Reality Personal Live Captions for Deaf and Hard of Hearing students. This project will develop technology (primarily software) as part of a Illinois's leadership in accessibility and disability research for student learning. Using off-the-shelf AR glasses we will build a system to allow students to follow a live conversation or lecture without looking away from the presenter or presentation. The technology will be developed by including feedback from deaf students at Illinois. Eventually this project may help deaf and hard of hearing employees and veterans thrive in the workspace and navigate everyday challenges.

6. How much funding are you requesting?
14900

7. Provide a brief preliminary budget of how the funds would be used
$ 1,400 Hardware :Two AR glasses and supporting technology ($700 each). $ 9,000 Programmer student hourly (900 hours at $10/hr) $ 2,000 IT support and cloud costs Server support, and transcription costs at $2/hour) $ 2500 Conference and travel costs for upto 1 faculty, 1 grad student, 2 undergrad developers. e.g. To showcase and share this new accessible technology at Big10 IT and accessibility-related conferences. Note 1: Developer costs will be supplemented with CS students who are interested in contributing for independent study credit. Note 2: The successful funding of this project by VR@Illinois is expected to lead to an additional matching funds from DRES (upto $2K), and funds from Microsoft (upto $2K). Note 3: Publications and conference presentations will also help build the groundwork for potentially much larger funding external opportunities e.g. Commercial (Microsoft) and Academic (NSF)

8. Describe the anticipated outcomes of your project.

* Enables student learning for deaf and hard of hearing students. * Enables student learning and communication where signers are unavailable or prohibitively expensive. (e.g. office hours, and adhoc/quickly organized meetings) * May help with student retention/graduation success and community aspects of being a Deaf student in a non-Deaf culture in a R1 university. * Lowers costs of educational support for deaf students. Illinois demonstrates leadership in digital accessible education. * Compelling narrative regarding use of AR for accessibility. * Interesting PR and compelling news story for UIUC. * Possible leverage to future larger funding (e.g. VR/AR accessibility research center) * Possible patent, and commercial licensing opportunities * Highlight this as part of the Provost's new "Student Success" initiative

9. What is the proposed timeline for your VR project?
Prototype within 6 months. Early Working shareable version within 9 months. Conference presentations, reports and external support within 24 months.

10. Additional information
How many lectures, and office hours, meetings and interactions does a deaf student experience each day? This Augment Realty project will enable live captions (using latest automated speech-to-text technology) for many of these interactions. We have already completed some initial pre-prototype HTML 5 implementations using previous generation AR glasses and test code. These tests are not yet ready for actual use but have successfully demonstrated the feasibility and utility of this approach for deaf students. This project hasa multi-disciplinary team project that includes a deaf graduate physics student, CS faculty and students, and includes members of DRES including Dr. Gunderson. Dr. Gunderson is the Coordinator of Accessible IT Group in the Division of Disability Resources and Education Services (DRES).