MEng Design Project Announcement – 2018

Project Title: Virtual Reality Biofeedback for Mindfulness

Project Description You will be working in a cross-functional team with students from Cornell and other universities to build a virtual reality mindfulness meditation platform for K12 education. The VR headset incorporates biosensors for various software applications including biofeedback visualization in the virtual environment and adapting the guiding mindfulness lesson audio in real-time based on user’s emotional responses. Your responsibilities will encompass the electronic assembly of the biosensors and circuitry in the headset. We are looking for 1-3 students.

Expectations
• Complete tasks on schedule and communicate loudly, clearly, and early if unable to meet deadlines
• Be proactive in collaboration with teammates from other departments
• Attend & participate in weekly meetings
• Set your personal learning outcomes for semester

Team Goal To have a functional VR mindfulness platform by Wednesday Nov. 21 ready to pilot in Spring 2019 with partner school district.

Preferred Qualifications
• Ability to design PCBs
• Experience with hardware design for portable electronics
• Knowledge on batteries, microcontrollers, wireless protocols, signal integrity, biosensors (pulse, respiration, HRV etc.)
• B.S. in Electrical Engineering or equivalent experience
• Experience with Unity3D is a huge plus but not necessary

Deliverables A functioning electrical assembly that is battery operated, BLE enabled, with clear usable signals from pulse & respiration sensors. This assembly is expected to be fully integrated into the VR headset in Fall 2018. Team goals and deliverables for Spring 2019 will be set at a later date.

Intellectual Property All students on this project will be required to sign an NDA and IP assignment to the partner company.

Number of MEng Students Needed: 1 to 3

ECE Field Advisor Name: Bruce Land
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Outside Client:
Deanna Deyhim (If interested students want to meet in person on campus must be before Aug. 22)
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