IOWA STATE UNIVERSITY

May 13-20

Prof. Qiao

Department of Electrical and Computer Engineering	Senior Design Project Proposal Form		
Client/Company/Organization: Virtual Reality Applic	ation Center (VRAC)		
Submitter (name): Stephen Gilbert (client)	Email: gilbert@iastate.edu		
Project Contact:	Email:		
Project Title:			
Real-Time Mobile Eye-Tracking Glasses			
Project Abstract (include ALL project goal(s), design cons	traints, and technical approaches and tools):		
Eyetracking glasses are available commercially from own, like OpenEyes. There is a camera on one or both This project will develop eye tracking glasses that did not just one, and 2) they stream the data over Wi-fi in a) tracks the eyes and b) integrate the video streams onto the image of the world. See example at http://w	oth eyes, and a camera looking at the world. If the from these in that: 1) they track both eyes, In real-time, not just capture it. The software will It is so that x,y positions of eyes can be mapped		
 Eye-tracking hardware should be inconspicuous an like in OpenEyes) System is mobile, lasting at least 3 hours on battery Video data and raw x,y eye positions stream wirele Eye tracking error no larger than 1.5 degrees Light weight (under 225 grams) Frame rate no less than 30 frames/second Hardware should be able to fit inside modified activities reality applications) 	y power ssly in real time		
Expected Deliverables (include expected schedule, canno	ot be open-ended, must list at least one deliverable):		
1) A fully functional system that meets client's requirements!2) Full documentation of software and hardware			
Specialized Resources Provided by Client (be as specific a Access to Hom-Cam research group who has experience as several people on campus with eye tracking experience	with streaming multiple live wireless videos, as well		
Anticipated Cost: Financial	Resources Provided by Client (if any): \$1000+		
NOTE: General Resources Provided by ISU/ECpE: MSDNA, and research labs, e.g., electronics, embedded systems, ea	A software, and access to resources in ECpE teaching		
Enter # Students Preferred/Required: ① Electrical Engineering ① Computer Engineering ② Software Engineering ○ Other (specify):	Special Skills Required of Students (be specific): Proficiency in C++ programming Wireless data networking		

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Anticipated Client Into	eraction (estimate):						
\square 1 meeting per week	K						
\square phone, \square in	iternet, 🗖 live						
■ 1 meeting per mon	th						
\square phone, \square in	iternet, 🗏 live						
☐ 2 or more meetings	per month						
\square phone, \square in	iternet, 🗖 live						
☐ 1 meeting per seme	ester						
\square phone, \square in	iternet, 🗆 live						
Meeting ABET Criteria	 3						
Please rate the follow	ing statements as the	y relate to your proposed pro	ject:				
			3 – A Lot		4 – Completely		
On this project, studer science, and engineeri		knowledge of mathematics,	□ 0	□1	□ 2	■ 3	□ 4
This project gives students an opportunity to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability		nt, □0	1	□ 2	□3	4	
This project involves students from a variety of programs, i.e., SE, EE, and CprE			^d □0	□1	□ 2	■ 3	□ 4
This project requires students to identify, formulate, and solve engineering problems			□0	□ 1	□ 2	□3	4
This project gives students an opportunity to use the techniques, skills, and modern engineering tools necessary for engineering practice			□ 0	□1	□ 2	□3	4
Project Approval – for ☐ Approved	r use by ECpE Senior I	Design Committee ☐ Not Appro	ved				
☐ Faculty Advisor Ass							
☐ Project Number Ass	signed: May 13-20						