EE 491 WEEKLY REPORT 3 **Date: 2/08/2016**

Group: **DEC1605**
Project title: **Kepros Physical Therapy & Performance, PC**
Client: Ted Kepros
General Advisor: Suresh Kothari
Technical Advisor: Jeremias Sauceda

Team Members/Roles:
Anthony Branson: Team Leader
Jiahui Quan : Team Webmaster
Samuel Eue : Key Concept Holder
Benjamin Engh : Team Communication Leader

✓Weekly Summary

This week, we finally had a meeting with Kothari, Kepros, and Sauceda. At the meeting we received the hardware and determined our next steps. Afterward, we examined the hardware and brainstormed some changes that may need to be made.

✓Past week accomplishments

- Anthony organised the meeting with the advisors for Thursday at 4:30.
- Benjamin created a Skype account for the team. The username is DEC_1605
- Anthony and Jiahui showed up to the meeting early to finish off preparations, and we all discussed with the advisors for an hour.

- ❖ We all met again on Sunday, February 7th for an hour and a half to discuss the hardware and our next goals.
- ❖ Samuel compiled a list of hardware that are of interest for the project.
- ❖ Benjamin wrote this weekly report on February 8th.

✓ **Pending issues**

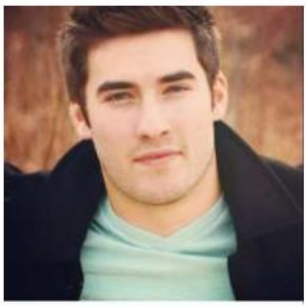
- ❖ By examining the current hardware, we were able to determine that it isn't working in its current state. The batteries that were soldered on have been cut off. Also, the documentation doesn't explain why they hooked up the hardware the way they did, and it doesn't explain how to use the program.

✓ **Individual contributions**

NAME	Individual Contributions	Hours this week	HOURS cumulative
Ben	Skype account Weekly report doc	4	9
Jiahui	Go through some datasheet of the components used in the prototype, start setting up the website	4	8
Anthony	Reviewed project documentation, facilitated communication	3.5	7.5
Samuel	search and compare some useful hardware	3	6

✓ **Comments and extended discussion**

Ted asked us to create a document telling him more about us so he could get to know us better and to know which part of the project each of us will be more likely to work on.



Tony Branson

TEAM LEADER

Major: Software Engineering

Interests: Medical Application Development

Hobbies: Golfing, Running

Experience: Programming in Java, C, and several other languages. I spend my summers working as an application development intern at UnitedHealth Group, Optum.

Bio: I am from Rochester, MN. I hope to someday use my software knowledge to develop applications for medical practice. When I'm not working I like to take care of myself and walk my dogs.

Samuel Eue

TEAM CONCEPT HOLDER

Major: Computer Engineering

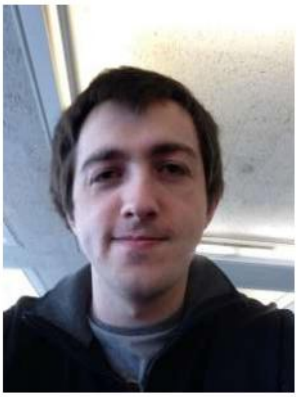
Focus: Software

Interests: Augmented/Virtual Reality

Hobbies: Crafting

Experience: Programing in Java, C, C++, VBA. Macro circuit construction. Small scale crafting (clothing, props, jewelry, personal software etc).

Bio: Calls a small farm near Radcliffe IA home and spent childhood doing various chores and crafts around the farm, from woodwork to caring for livestock. was homeschooled from 3rd grade on till going to ISU. likes anime, medieval weaponry, and crafting with any material that is on hand.



Ben Engh

TEAM COMMUNICATION LEADER

Major: Computer Engineering

Interests: Databases/ Mobile Apps

Hobbies: Gaming and Fishing

Experience: : I have experience with some hardware that is applicable for this project (embedded systems and integrated electronics), but overall I have more experience with software including C++ and some Android development, which the previous team used.

Bio: I grew up on a hobby farm in Prior Lake, Minnesota and have always been interested in electronics. I also enjoy good puzzles and helping others with their technology problems, so computer engineering was a natural fit.

Jiahui Quan

TEAM WEBMASTER

Major: Electrical Engineering

Focus: Signal and Communication Systems

Interests: Signal Processing/Mobile Communication

Hobbies: Reading and Writing

Experience: Java, C, C++ (Embedded System), Matlab (Signal Processing)

Bio: I am from northeastern China, where it is as cold as Iowa State. I really want to use my skills to make our lives better. I like reading in my spare time and sometimes write short novels.

✓ **Plan for coming week**

- ❖ We should all meet with Jeremias, so we understand how to use both the software and hardware. If it's not possible to find a time where Jeremias can meet with all of us, then we can set up a second meeting to teach the team members who weren't able to go to the meeting.
- ❖ We also need to schedule a face to face meeting with Kepros, so he can further explain the requirements of the project and we can discuss the changes that may need to be made on the current hardware. Ted has expressed interest in coming to Iowa State soon, and we would also like to visit his facility in Cedar Rapids.
- ❖ During the meeting, we were advised to make a GitHub repository to make the code more easily accessible.
- ❖ Talk to fabric designers to learn if there is a fabric better suited for the project.

✓ **Summary of weekly advisor meeting (if applicable/optional)**

At the meeting, Ted explained that he wants to get the project that the previous team worked on closer to commercialization. It should be able to determine if they have proper posture, such as the correct seating position and angle of their chair, and it can be used to determine fatigue levels. Jeremias showed us how to connect the hardware onto the shirt and detailed the components that were used. The most important parts are an Arduino, 4 gyroscopes attached to the corners of the shirt, 2 EMGs to measure muscle activity, and a bluetooth transmitter used to transfer data to the Android app. Finally, we made a rough timeline for the next few months. During the first 30 days, we

will play with the source code to understand it better and figure out if any of the hardware needs to be changed. The next 30 days after that will be spent getting useful data from the device, such as actual angles from the gyroscope instead of the gyroscope's default values. After that, we will work on getting graphs of this data on the computer and phone.