EE/CprE/SE 491 Biweekly Report 4

Oct 12 - Oct 25

Group Number: Sddec22-14

Project Title: Machine Learning for Human Biometrics

Client: JR Spidell (Collins Aerospace)

Advisor: Akhilesh Tyagi

Team Members/Role:
- Ron Mei Hang Teoh - Database Manager
- Yee Shen Teoh - Hardware Manager
- Zi-Jan Wong - ML Manager
- Nathanael Morris - ML Manager
- Ritvik Maripally - Security Manager

Weekly Summary
We talked about some of the issues we are facing during our meeting with the client. He provided us with some helpful feedback, and most of us spent our time this week working on solving those issues. We have also planned a date and time to meetup in the upcoming week to get prepared for the PIRM presentation.

Past week accomplishments
Jan - Received a second dataset from the client, and worked on error calculation algorithm.
Ron - Made progress with the permission issues to download the InfluxDB packages, now trying to install other packages such as "curl"
Yee Shen - Running into the same problem in PYNQ images as we had in the older images. I have talked to the client regarding that issue and we managed to solve it. Client also provided me some task to complete that would help with the this project.
Nathanael - Worked on removing the blink data from the eye movement videos in the ML algorithm to get X and Y coordinates of the pupil. Used the hue circle algorithm to estimate where the eye is it is partially closed (during a blink), so that more accurate eye data can be read.
Ritz- Working on bounce diagrams

Pending issues
- N/A

Individual contributions

NAME	Individual Contributions	Hours this week	HOURS cumulative
Ron Mei Hang Teoh	Downloaded several packages necessary to run InfluxDB	12	48
Yee Shen Teoh	Solving error shown in PYNQ images and completed task from client.	12	48
Zi-Jan Wong	Error calculation algorithm	12	48
Nathanael Morris	Worked on throwing away data that is not needed in eye movement video	12	48
Ritvik Maripally	Making bounce diagrams for project	12	48

Comments and extended discussion
- N/A

Plans for the upcoming week
Jan - Need to work on changing parameters so that the CNN detects iris instead of pupil, might need to test accuracy on the CNN to predict the new dataset, and also test if training the CNN on the new dataset would further increase accuracy.
Ron - Keep downloading all the other packages necessary to run the database.
Yee Shen - Try using openCV on terminal to manipulate images from file.
Nathanael - Continue working on the hue circle algorithm and getting it to fix/ remove blink data.
Ritvik Maripally- Keep working on bounce diagrams and help with database protection

Summary of weekly advisor meeting
No advisor meeting for both weeks.