

## EE/CprE/SE 491 WEEKLY REPORT

2/3/2020 – 2/16/2020

Group number: 27

Project title: Big Classroom Support

Client &/Advisor: Dr. Lotfi

Team Members/Role:

Brendan Niroula - Leader

Ali Al Ahababi - Front End Development

Jian Kai Lee - Back End Development

Zechen Huang - Facial Recognition Specialist

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### Weekly Summary

The overall objective of this week was to narrow down options on hardware/devices, make a decision on frameworks and languages. Tasks completed include research into frameworks and devices, calling companies to figure out their data transfer protocols and selecting Flutter and Python for our front end framework and back end language. Only architectural changes have been made due to changes in our decision of a back end language.

### Past Week Accomplishments

Research on Device to use and contact smart glass company- **Jian Kai Lee**

- Researched on different glasses currently on the market and looking for any SDK for glasses
  - Compare the functionality between each other and prices
  - Epson Moverio, Vuzix, nreal and google glass
- Contract Vuzix Smart glass company for more information
  - Currently looking for Vuzix Blade Smart Glass and cost about 799 USD
  - Information: running Android OS, offered 10% discount, open source

Research on hardware and frameworks for front end development - **Brendan Niroula**

- Researched more glasses including Brickhouse Security, Vuzix and Ivue
  - Brickhouse Security purchases their glasses through third party manufacturers, the manufacturers are in china and I could not get ahold of them
  - Vuzix is more than our budget but does include the necessary tools for this project
  - Ivue never answered or returned calls
- Front End framework research

- For a front end framework I researched and tested Flutter. Flutter seems pretty intuitive and quick to code in. It takes as many resources as an android studio.

Testing available cross-platforms for developing iOS and Android apps - **Ali Al Ahbabi**

- Xamarin
  - Installed and explored xamarin features.
  - I found out that Xamarin is very slow and heavy
  - Also, Xamarin is not supported by linux
  - Xamarin Community is bigger than Flutter community
- Flutter
  - Installed and explored flutter features
  - Flutter is a lot faster than Xamarin
  - Flutter is better in handling heavy graphics
  - Flutter is more close to native than Xamarin

As a team, we decided on workin on Flutter based on the information we gathered during testing and researching.

Researched on face recognition algorithm. Testing two of them using Node.js and Python. - **Zechen Huang**

- Node.js and face-api.js <https://github.com/justadudewhohacks/face-api.js>
  - Installed and explored Node.js features.
  - Get some example output of the face-api.js
  - Never learned Node.js, so I need time to learn it.
- Python with Emopy and Face and Emotion Recognition
  - <https://github.com/thoughtworksarts/EmoPy>
  - <https://github.com/vjgpt/Face-and-Emotion-Recognition>
  - Test with EmoPy using Python.
  - Get example output of Emopy
  - Tried Face-and-Emotion-Recognition but not successful. I will keep trying it.
  - Python and Node.js are at the same level, but we are more familiar with python, so we should go with python.
- Called several Chinese companies about glasses, but they are either no response or not able to develop.

**Pending Issues**

- Can we use the Vuzix glasses even though they are outside our budget? If not, how should we proceed? - **Brendan Niroula**

### **Individual Contributions**

Name	Individual Contributions	Hours This Week	Cumulative Hours
Brendan Niroula	Research on mobile framework and AR glasses in the market	6 this week and 6 last week	18
Ali Al Ahbabi	Test and compare our two options of cross-platforms: Xamarin and Flutter.	6 this week and 6 last week	20
Jian Kai Lee	Research on Programming Language mobile development and hardware device for glasses with live stream camera	6 this week and 6 last week	18
Zechen Huang	Research on Face Recognition and language to use. Research on Emotion detect which has similar use of face recognition. Call some Chinese companies might sell glasses but no response.	6 this week and 6 last week	18

### **Plans for the upcoming week**

- Decide on a company for the smart glasses - Everyone
- Begin coding in Flutter - Ali & Jian
- Begin coding in Python and Backend - Brendan & Zechen

### **Summary of weekly advisor meeting**

Week 2(2/3-2/9): Meet with Advisor to figure out our research in Smart Glass option and the mobile framework. Discussed possible options in creating smart glass on our own.

Week 3(2/10-2/16): Advisor was unable to meet this week.