Project: Emotional States

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Team members

• Sicong Zhao

• Mikella Green

**What did I accomplish this week?**

I trained and Tested 4 different model to predict Valence as a regression problem.

The models were Simple linear regression, Lasso regression, Random Forest and Mixed Effect Random Forest.

Given that we could not have a meeting with Dr. Larkin I decide to train a model to predict both known users as unknown (new) users. The main idea of this week was to do a proof about how well the different models would behave depending on the question/objective (predict new users/ predict same users).

I continue researching about Mixed effects in Machine Learning and trained and tested successfully this model to our data.

**How many times did you get stuck this week in some significant way?**

Dr. Larkin was unavailable to meet with us to discuss how we should approach this problem.

**Was there anything that you set out to accomplish this week but did not?**

I develop a pipeline to perform a Fast Fourier Transformation to the data, but nevertheless I am not sure if this features has sense given that the sampling rate (variable and indirect) and the output (Fitbit provides a aggregated measure and not raw data) do not match. I need to meet with a researcher that do work with Fitbit Heart Rate.

**If your project is moving slower than expected**

Yes. We were not able to meet with Dr. Larkin and we were not able to define how to approach the modeling problem.

**• How does this slow down affect your overall schedule?**

We had a meeting with Jana, and we decided to make two different predictions (Only positive and only negative valence). We are going to divide this problem in two parts, as classification and a regression one .

**• Are you still on track to finish your project?**

I consider that we are.

**What do you plan to accomplish in the following week?**

Talk with people from Fitbit about what would be an interesting product for them.

Decide what type of problem we are going to tackle. I will train and test 4 models.

Two regression models for positive valence only (for new users)

Two regression models for positive valence only (for known users)

Two regression models for negative valence only (for new users)

Two regression models for negative valence only (for known users)

**What if any, help or resources do you need from your client, project managers, or MIDS?**

Yes, I would like to meet with someone that works with heart rate and fitbit to discusss feature engineering.

Hour card

2/17/2020

- Reading about CrosValidation, Mixed Effects 10-11 / 13:30-15

- Group Meeting (only sicong) 15 – 15.30

- Prepared the dataset to train the model 21:30 - 23

2/18/2020

- Train Test different models 11-14

2/19/2020

- Train Test different models 10-11:30 / 15-18

2/20/2020

* Meeting with Jana 13-14
* Worked on the power point 20-24

2/21/2020

* Present 10:45 – 11

TOTAL 18 hours