E E / CPR E / S E 491 - Weekly Report 04

10/27/19 – 11/03/19

Group number: sdmay20-41
Project title: Machine Learning for Understanding Aging
Client &/Advisor: Dr. Julie Dickerson
Team Members/Role:

- Ian Simon / Chief Engineer
- Jacob Laing / Chief Engineer
- Nathan Carter / Test Engineer
- Samantha Williams / Meeting Scribe
- Scott Rose / Meeting Facilitator
- Aria Sheets / Report Manager

Weekly Summary:

- The biggest task this week was updating our design document. We had to add to it so that we could present an updated version for our client. We revised a lot of our old content. A lot of changes had been made since we last made our document, so the majority of our sections had major revisions.
- We also continued our research on importing and analyzing data with linear regression. We continued making visualizations with P@@lotly and working with the Sci-Kit Learn library.
- We did more research on how to use DDI files. We hit a dead end with using other people's DDI file readers to parse the MIDUS data.

Past Week Accomplishments:

- Ian Simon: Worked on getting a response from the MIDUS team as well as some more work on linear regression. I also attempted to use plotly in order to display the linear regression data. I was able to get the plot to work but not the linear regression line.
- Jacob Laing: Worked on updating the design document and looking into how to read DDI data from the XML files. I Also went back and did a little bit more reading on how the different regression techniques worked.
- Nathan Carter: Continued work on regression techniques. Looked further into using cross validation and plotly with the lasso regression example created in a previous week. Updated parts of the design doc before the 2nd submission.
- Samantha Williams: Worked on importing data and analyzing it using linear regression. Also, continued looking through the information we received from the contacts that distribute the MIDUS data for a good way to parse the DDI files. Created the table of tasks and the amount of time we believe each task will take per week. Reviewed the last version of the design document and updated any information we changed since our last meeting, such as the decision to use the MIDUS data.

- Scott Rose: Worked on updating the design document. I also worked on trying to open the MIDUS DDI metadata file. I could not get it to open with a program called Colectica. I tried 2 other programs that said they could open DDI files, but I could not get those to work either.
- Aria Sheets: Worked on importing data and analyzing it using lasso regression. I created a Gantt table for our project so that we could give specific dates to the tasks and milestones that we'll need to due. I added more details to our design doc and updated our project plan to be a more detailed and time-specific.

Pending Issues:

- Ian Simon: We need to look at what the MIDUS team sent for the DDI files to see if we can get them to work. I also need to learn more about plotly and displaying the linear regression line in the table.
- Jacob Laing: Still haven't found a way to read in the DDI files so we will have to keep looking into how that can work.
- Nathan Carter: No unexpected individual complications.
- Samantha Williams: We are still working on parsing the DDI files and figuring out the most efficient way to do so.
- Scott Rose: My search for getting into the DDI files open through programs other people have made hasn't been successful. There is a git repository that has more documentation on the files. I will read through the repository and see if it has information on how to read the DDI files
- Aria Sheets: We are still trying to understand how to parse the DDI files.

Individual Contributions:

Name	Individual Contributions	Hours this week	Hours Cumulative
Ian Simon	Worked on linear regression and visualizing the data in plotly. Finally received a response from the MIDUS team concerning the DDI files.	3	25
Jacob Laing	Worked on updating the design document and looking into how to read DDI data from the XML files. I Also went back and did a little bit more reading on how the different regression techniques worked.	2	24
Nathan Carter	Continued work on lasso regression. Began researching cross validation. Began work on using plotly instead of matplotlib. Updated design doc.	3	27

Samantha Williams	Worked on linear regression analysis and visualizing the data. Also continued researching the best way to import ddi data.	2	25
Scott Rose	Updated the design document. Did some more research into how to open DDI files. I also helped with the technical challenges lightning talk.	4	25
Aria Sheets	Worked on lasso regression analysis. Continued research on machine learning. Updated the design of our project and created a Gantt chart for all the tasks and milestones we had.	5	30

Comments and Extended Discussion (Optional):
- We were able to complete a good amount of work this week, but we also had to spend a lot of time finishing the assignments and the design doc this week.

Plans for the Upcoming Week:
- Ian Simon: I plan to do some more work on the DDI file converting. We need to get this figured out in order to move forward on the project. I can also work on getting the linear regression to work in plotly this coming week.
- Jacob Laing: Keep looking up to see if there is a way to read the DDI files and then attempt to read in one of the files given. I will also continue reading about some of the other regression techniques.
- Nathan Carter: I will continue work on lasso regression. I hope to be able to implement cross validation with our existing lasso regression example. I will also continue working with plotly and attempt to get the example plotted with that library.
- Samantha Williams: This week I plan to find a way to read the DDI files or try to reach out again to the contact to get more information regarding parsing the files.
- Scott Rose: The makers of the DDI files have a git lab that I can look through. I will see if I can find out any more information about the files through the git repository.
- Aria Sheets: I will continue work on understanding lasso regression with Nathan. Hopefully our team will have a better understanding of this type of regression by the end of next week because this is the regression algorithm we plan on using for our project.