

sddec18-13: Asset management - Financial Factor Discovery - "Value"

Week 4 Report

February 15 - February 21

Team MembersCarter Scheve — *Communications Lead*Nathan Hanson — *Project Progress Tracker/Manager*Caleb Utesch — *Meeting Scribe*Jack Murphy — *Research Analyst*Samuel Howard — *Lead Engineer*Alex Mortimer — *Project Manager*

Weekly Summary

This is the fourth weekly report for our Senior Design team, containing information about the events that have transpired within the last week. After delivering our first report on the findings of our initial research and tests with each of our respective models, we have lots of things to go back and fix with our approaches. Our client looked at the results we came up with, and offered advice to help our models be more accurate and robust. The coming week will involve implementing these changes, and bringing back our first iteration of changes to be reviewed by the client.

Summary of Progress this Report

- Experimented with each of our specific prediction models
 - Created report for client specifying advantages and disadvantages of our models
 - Notified client of any issues had with fitting models to the data
 - Pitched experiment results to client
 - Advantages and disadvantages as they applied to the dataset provided
 - Speculated on some experimental data analysis findings and what they could mean
 - Discovered some errors in the way we were approaching the problem
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Pending Issues

- Our group is still unfamiliar with the dataset (which is desired by the client), so we are using some of the wrong data in the wrong part of fitting the models
 - Since all we have is raw data and no given results, it is difficult to know when a model is predicting results correctly, or if we have an error in our algorithms
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Plans for Upcoming Reporting Period

- Revisit our models and continue trying to fit them to the datasets provided
 - Organize the data into separate frames for data to use in predicting, and data to use in testing
 - Work towards improving accuracy for the models once they are implemented correctly
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Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Carter Scheve	<p>Learned EDA techniques on Kaggle.com Did EDA on given dataset Learned more about machine learning on Kaggle.com Did basic machine learning techniques with Naive Bayes on dataset Did more to develop data library</p>	12	39
Nathan Hanson	<p>Reviewed Git & issue tracking workflow. Researched machine learning techniques. Researched Support Vector Machine classification. Began implementation of Support Vector Machine classification using dataset. Began selecting more relevant inputs for SVM usage. Familiarize self with data import and usage.</p>	11	33
Caleb Utesch	<p>Took notes during all meetings and shared with the team on google drive. Reviewed titanic machine learning tutorial on Kaggle. Did EDA on dataset using Linear regression models. Carried out two different trials using different parameter categories and made linear regression models for each. Analyzed the statistical summary from each trial.</p>	10	32
Jack Murphy	<p>Learned how to work with KNeighborsClassifier in Python. Did testing with the Titanic problem in order to gain a better understanding of how to implement the KNN algorithm. Went through Datacamp tutorial.</p>	10	34
Samuel Howard	<p>Continued exploratory data analysis and slowly trying to understand autoregressive analysis techniques. Helped with random forest fitting.</p>	10	34
Alex Mortimer	<p>Managed to implement a basic Random Forest Classifying model (with help from Sam) and fit it to the Titanic test dataset that we worked with last week. Then I fit the model to the data provided by the client and began running tests with that to find out-of-the-box results. I've been struggling to find a way to confirm that the model is correctly making predictions, since the values given for</p>	15	41

	accuracy are suspiciously high, much higher than what our client said was normal. I will consult with our main client representative to see if he has any suggestions.		
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