

sdmay19-06: Quantitative Research Modeling Library

Week 8 Report

November 3 - November 9

Client: Joseph Byrum

Advisor: Srikanta Tirthapura

Team MembersJosiah Anderson — *Meeting Facilitator*Doh Yun Kim — *Scribe*Gabriel Klein — *Report Manager*Drake Mossman — *Communication Manager*Nathan Schaffer — *Overseer*Jacob Richards — *Quality Assurance Manager*

Summary of Progress this Report

This week we continued to work on our second iteration of the factor portfolio aggregation prototype. Based on the feedback we've received so far it seems to be close to functional for our purposes. We significantly improved its efficiency, and it contains all the necessary data for the modeling step of the pipeline. We also continued to work on standardizing our approaches for documentation and testing for the project. We will soon begin to implement our chosen approaches in the coming weeks. Finally we were able to have in depth discussions with our client on future portions of the pipeline. We have members looking ahead and considering design choices for those portions, which should help in splitting up work independently.

Past Week Accomplishments

Josiah Anderson

- Researched python standards in coding practice and documentation
- Established a team wide standard for using docstrings to document our python classes and functions
- Presented our progress to our PM at Principal and received feedback on our design diagram

Doh Yun Kim

- Created actual R library that will allow the calling of different Python functions (using reticulate)
- Found several simple models to use in the modeling step, base
- Researched mocks for Python
- Planned design for modeling step

Gabriel Klein

- Finished factor portfolio aggregation prototype
 - Received feedback that we need the result to include more data than expected
- Adjusted the aggregation to include the new necessary data and updated the rest of the code
- Combined the group's work on different branches

Drake Mossman

- Portfolio Aggregation Efficiency Improvements
 - Benchmarked query times
- Documented technical barriers/solutions with database

- Planned for improvements to workflow / github usage

Jacob Richards

- Looked more into gitlab CI
 - Emailed ETG about vm server for Runners
- Looked into assigning branches to related issues in gitlab
- Reviewed some code written by teammates

Nathan Schaffer:

- Finished Python packaging
 - Reviewed team code
 - Added solution to documenting technical issues
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Pending Issues

We are currently waiting for a server to use for our continuous integration testing. We should have one set up in the next two weeks or so. There are no other pending issues.

Plans for Upcoming Reporting Period

Josiah Anderson

- Begin documenting current classes and functions
- Look ahead to the model analysis steps and begin researching the solution for those steps.
- Class Reflection

Doh Yun Kim

- Integrate mocks and prediction models into planned modeling step
- Have prototype of modeling step done this week

Gabriel Klein

- Add ability to specify preferred identifier for factor portfolios
- Look into Python testing frameworks and consult Jacob to choose one
- Write tests for the existing codebase

Drake Mossman

- Research solution to merging/ packaging difficulties
 - Possibly move away from Jupyter Notebook development
 - Look into installing browser-based Python IDE on server

Jacob Richards

- Implement CI when able
 - Coordinate with teammates about tests for CI
- Finish reviewing python code written by team

Nathan Schaffer:

- Adjust python package
 - Review code written by teammates
 - Start researching and building of Factor policy and scoring stocks part of pipeline
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Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Josiah Anderson	Documentation, Research	6	60.5
Doh Yun Kim	R packaging, Python mocks, modeling step design work	7.5	56
Gabriel Klein	Factor portfolio aggregation, combined branches	8	64.5
Drake Mossman	Portfolio Aggregation optimization	10.5	60
Nathan Schaffer	Python packaging	6	48
Jacob Richards	Gitlab CI / Issues research, team code review	7.5	51.5