

Part 4: Report Writeup + Technical Analysis

Overview

In the real world, you'll frequently need to share your findings with other experts. In part 4 of our Capstone project, you'll assemble a technical notebook that details the findings of your predictive model to share with your peers. It should be written in a language that satisfies technical stakeholders, providing complete documentation of your problem statement, approach, analysis, and source code.

Be sure to explain the machine learning applications of your data. Use your model to display correlations, feature importance, and unexplained variance. Explain your research with a summary, reviewing the strengths and weaknesses of any variables in the process.

Many modeling approaches are all about fine-tuning the algorithm parameters and trying to find a specific value. Show how you optimized for this value, and the costs/benefits of doing so. Explain why you have chosen one or many feature(s) over others. Identify what other data and/or features could help your model.

Where applicable, show visualizations of your analysis, explaining the outliers and the relationships between the features/data.

Goal: A technical Jupyter notebook that reviews and explains your model for technical stakeholders, including all necessary code and variables.

Requirements

Your work should document findings for peers and technical stakeholders, including:

- Executive Summary
- · Identification of outliers
- · Description of how you defined your variables
- Discussion of model selection and implementation
- Description of any data pipeline(s)
- Visualizations & statistical analysis
- Interpretation of findings & relation to goals/success metrics
- Description of any source code used to conduct analysis
- Stakeholder recommendations & next steps for model/peers

- Bonus:
- Describe how you could validate your model's performance over time
- Explain how you would deploy your model in a production environment
 - Create a blog post of at least 500 words explaining your overall approach, model implementation, specific analysis, findings, and lessons learned. Link to it in your Technical notebook.

Necessary Deliverables

- Materials must be submitted in a clearly labeled Jupyter notebook, including:
 - o Markdown writeups, code, and visualizations
- Materials must be submitted via a Github PR to the instructor's repo.
- Materials must be submitted by the end of Week 11.

Suggested Ways to Get Started

- Don't hesitate to write throwaway code to solve short term problems
- Read the docs for whatever technologies you use. Most of the time, there is a tutorial that you can follow, but not always, and learning to read documentation is crucial to your success!
- Write pseudocode before you write actual code. Thinking through the logic of something helps.
- Document everything.

Useful Resources

- How to Report Statistics to Technical Audiences
- Data Science Employers Value Research Reports

Project Feedback + Evaluation

Attached here is a complete rubric for this project.

Your instructors will score each of your technical requirements using the scale below:

Score	Expectations
0	Incomplete.
1	Does not meet expectations.
2	Meets expectations, good job!
3	Exceeds expectations, you wonderful creature, you!

This will serve as a helpful overall gauge of whether you met the project goals, but **the more important scores are the individual ones** above, which can help you identify where to focus your efforts for the next project!