The Final Push

Final Project Requirements

Do What Your Heart Commands

Final Project Requirements: Demystifying ML

01 Find a problem worth solving, analyzing, or visualizing.

02 Use ML in the context of technologies learned.

03 You must use: Scikit-Learn and/or another machine learning library.

04 You must use at least two of the below:

Python Pandas	HTML/CSS/Bootstrap	JavaScript Leaflet	Google Cloud SQL
Python Matplotlib	JavaScript Plotly	SQL Database	Amazon AWS
	JavaScript D3.js	MongoDB Database	Tableau

05 Host application using Heroku or a tool of your choice.

Final Project Requirements: Demystifying ML

06 Prepare a 15-minute data deep-dive or infrastructure walkthrough that shows machine learning in the context of what we've already learned.

07 Example projects:

- Create a front-end interface that maps to an API to "smarten" the algorithm.

- Perform a deep dive of existing data using machine learning.

- Create a visualization that continues to learn where clusters lie based on ML. (Use D3 or Plotly to change the visualization.)

- Create an idea with mock data that simulates how machine learning might be used.

- Create an analysis of existing data to make a prediction, classification, or regression.

Marking rubric

SECTION	WEIGHT	REQUIREMENT
Technical	20%	Create your machine learning model using scikit-learn and/or another machine learning library.
	5%	Create Python Flask–powered APIs to perform predictions using your machine learning model.
	10%	Create a visualisation layer to visualise your analysis **and** machine learning model predictions e.g. Tableau, or a custom visualisation webpage (JavaScript Plotly, JavaScript D3.js, JavaScript Leaflet, HTML, CSS, Bootstrap). Your visalisation layer should include at least two dashboards or pages or views. Note: If you are using Tableau Public, then you will not be able to connect directly to your Flask API endpoint. Instead, you should create a Python Script that calls your Flask API Endpoints to pass in your explanatory variables and receive the predictions. Save the JSON prediction output to CSV and use the CSV for your Tableau visualisation.
	2.5%	Include some level of user-driven interaction in your visualisation layer (e.g., menus, dropdowns, textboxes, tableau filters)
	10%	Host your Flask API and Visualisation layer on a cloud service. Example: - Tableau: Host on Tableau Public - Flask API: Host on Heroku/AWS/Azure/Google Cloud - Flask Web App (Visualisation): Host on Heroku/AWS/Azure/Google Cloud
	2.5%	Data set with at least 100 records
	5.0%	Bonus marks to be awarded for additional features

SECTION	WEIGHT	REQUIREMENT
Presentation	5%	Describe the core message or hypothesis for your project.
	5%	Describe the questions you and your group found interesting, and what motivated you to answer them
	5%	Summarize where and how you found the data you used to answer these questions
	15%	Summarize your conclusions. This should include a numerical summary (i.e., what data did your analysis yield), as well as visualizations of that summary (plots of the final analysis data)
	10%	Discuss the implications of your findings. This is where you get to have an open-ended discussion about what your findings "mean".
	10%	Tell a good story! Storytelling through data analysis is no different than in literature. Find your narrative and use your analysis and visualization skills to highlight conflict and resolution in your data.

The key is to **show** the value of what you know.

Final Project

Forming Teams:

You can choose your team.

Teams should have 1–3 people.

Work with students from your class only.

Tell us if you want to be placed on a team.

Questions?