Project #4: Machine Learning Integration

Data Boot Camp

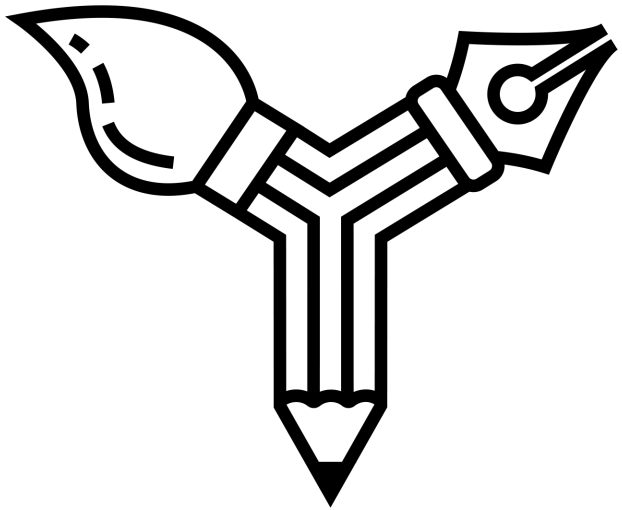
Lesson 23.1

Project Week Overview

Project Week! (This Week)

Day 1:

- Form groups (3–5 people each)
- Outline project ideas
- Initial data exploration
- Begin research of datasets
- Submit project proposal for approval



Day 2:

- Hardcore development

Day 3:

- Hardcore development

Project Week! (Next Week)

Day 4:

Hardcore development

Day 5:

Hardcore development

Presentation prep

Day 6:

Presentations

Final Project Requirements

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.

Project Rubric

Rubric at a Glance

Categories for grading

01 Data model implementation (20 points)

02 Data model optimization (20 points)

03 Project and documentation uploaded to GitHub (20 points)

04 Group presentation (20 points)

05 Slide deck (20 Points)

Project Examples

Final Project Requirements: Demystifying ML

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

Project ideas:

- 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.

Final Project Requirements: Demystifying ML in Healthcare

Example healthcare-related projects:

- Train an algorithm to recognize symptoms of disease and predict whether a patient is at risk.
- Train an image classifier to recognize anomalies (such as healthy vs. suspicious areas of skin).
- Using natural language processing, create a chatbot that will help connect patients with doctors.
- Create an algorithm to analyze patient history and predict the likelihood of potential inherited illness.

Final Project Requirements: Demystifying ML in Finance

Example finance-related projects:

- Create an algorithm that analyzes credit scores and predicts consumer personal loan eligibility.
- Using natural language processing, create a chatbot to perform simple tasks and help users find information.
- Train an algorithm to analyze consumer spending and predict future spending trends.
- Train an image classifier to assess property value; these data would then be used to calculate insurance quotes.

https://algorithmxlab.com/blog/applications-machine-learning-finance/

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

Questions?