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TLV Coding Bootcamp

Graduation Rates of American Universities

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Graduation Rates of American Universities

Project Summary:

Analyze undergraduate graduation rates using the IPEDS dataset, focusing on various factors such as public vs. private institutions, demographic influences, and how long it takes students to graduate (4, 5, or 6 years).

What problem/ or need does your project solve

The project addresses the need to better understand why many undergraduate students in the U.S. are not completing their degrees within the standard 4-year period, especially when compared across different types of institutions (public vs. private, military/US Service academies) and demographics.

Stack

List of technical stack used in my project:

- Python
    - Pandas
    - Numpy
    - Matplotlib
    - Seaborn
    - SkLearn
- Tableau
- Excel

Dataset

- Kaggle: https://www.kaggle.com/datasets/sumithbhongale/american-university-data-ipeds-dataset
- IPEDS API: https://nces.ed.gov/ipeds/use-the-data/download-access-database
- Orignially there were about 11,300 Rows and about 145 columns
- Filtered out all rows that were not in the US and the rows listed as community colleges
- Deleted any duplicates
- Filtered out via the Carniege Classification, and 4 year institutions
- Final dataset is about 1500 Rows and 130 Columns

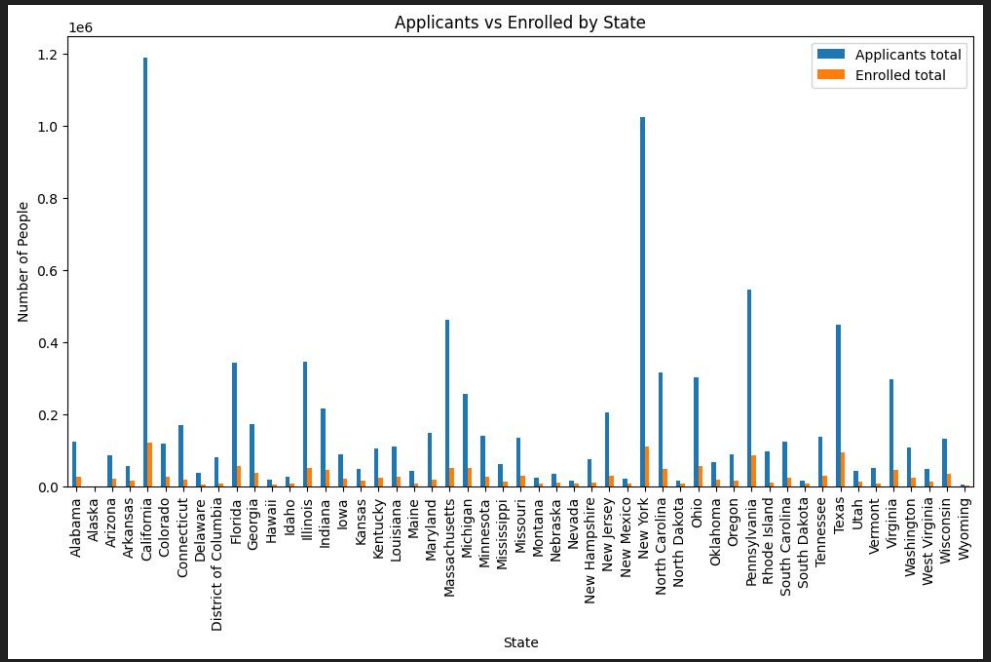
Objective

- The project addresses the need to better understand why many undergraduate students in the U.S. are not completing their degrees within the standard 4-year period, especially when compared across different types of institutions (public vs. private, military/US Service academies) and demographics.
- To see if it is worth going to college in 2024 based on the likelihood of graduating and how much time will be spent

Insights from Data

- With the exception of US Service.Military school the average graduation rate throughout the US is below 50% within 4 year and under 60% for 5 and 6 year attending college
- This shows that a majority of students within the data set are not graduating college and is not the best investment.
- Alternatives to College
  - Trade School
  - Tech Bootcamp
  - Entrepreneurship
  - Certificate Programs (Self Paced online programs)
  - Military
  - Employment without a college degree

Extra Graphs/Charts



Prediction Model

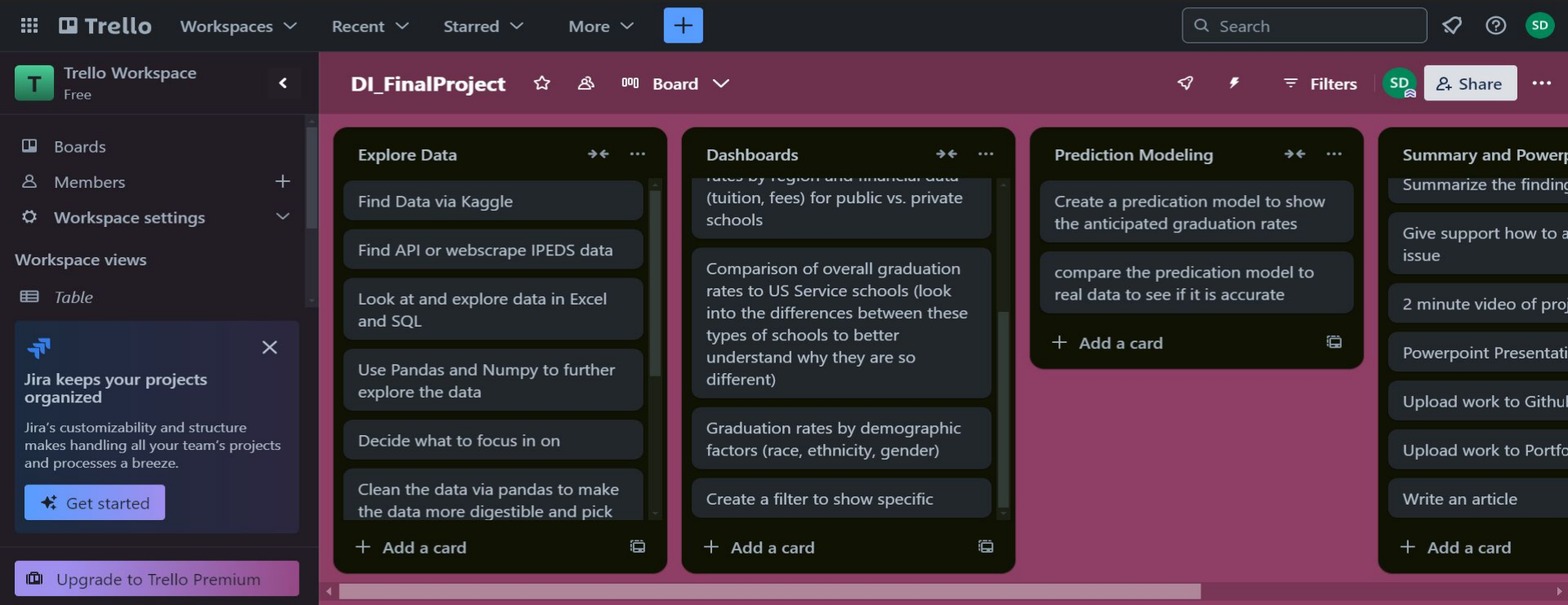
- Issues
  - The dataset that was used only had one year of data (2013)
  - That being said it was still possible to formulate a prediction moded based on how many people applied, got admitted, and them attended each university
  - This compared with graduation rate and the number of bachelors degrees given that year
  - Also the graduation rates of each demographic and geographical region was predicted as well
- Results
  - According to the results the average graduation rates slightly increased
  - Demographic: Slight increase of graduation rates across the board
  - Region: Slight increase of graduation rates across the board
- It would have been nice to get the next years data to see how accurate the prediction model was especially with the limited and abstract data

Limitations of Data

- Limited Familiarization Time
- Single-Year Data Limitation
- Challenges in Demographic Comparisons
- Insufficient Contextual Information
- Missing Critical Data Points
- Limited Comparison Metrics
- Statistical Significance Challenges
- Evolving Educational Metrics

Feature list

Make a screenshot of your trello



Link

Github link: https://github.com/SD347053795/DI_Final_Project

2-mn video link:
https://www.loom.com/share/ae24d2bb734141ac9a82e8b94159e04b

Deployed link:

Portfolio link: https://datascienceportfol.io/SD347053795

Technical article link:

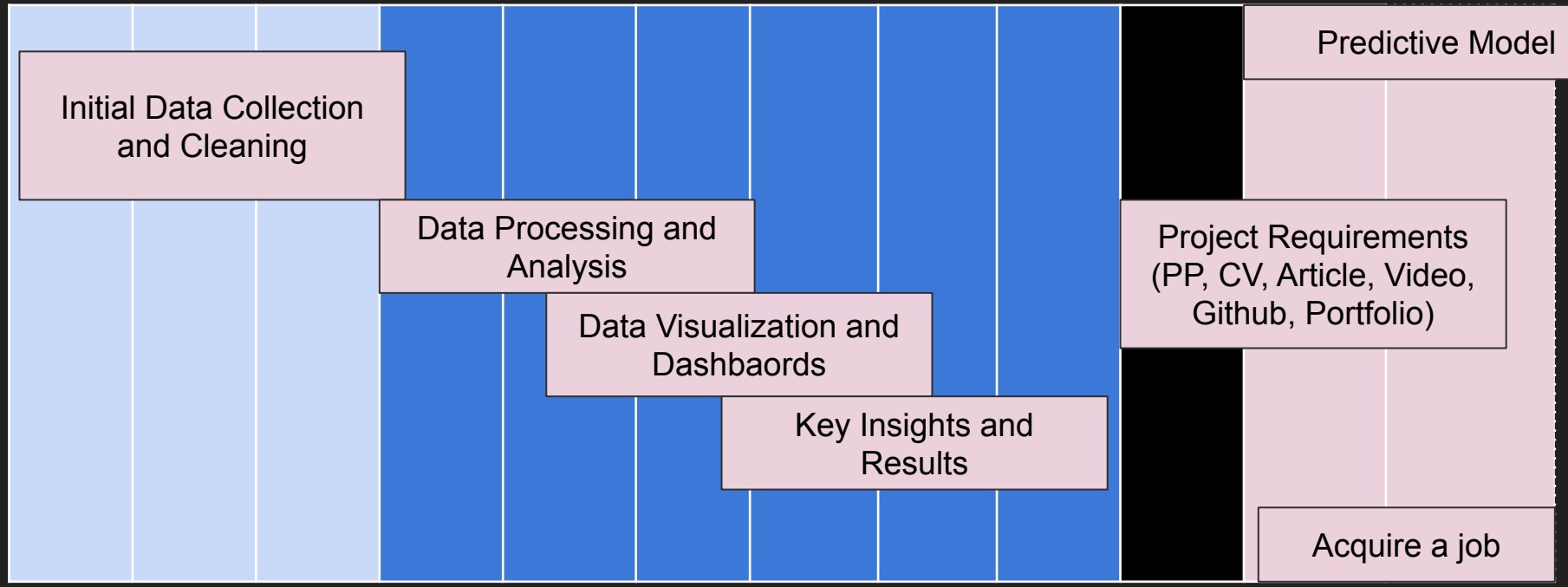
Career Prep

CV link: Drucker CV

Linkedin link:Linkedin

Job tracker link: DI Job Tracker

Roadmap


Initial Data Collection and Cleaning
Data Processing and Analysis
Data Visualization and Dashbaords
Key Insights and Results
Predictive Model
Project Requirements (PP, CV, Article, Video, Github, Portfolio)
Acquire a job

My next steps

1. Get through the Chaggim
2. Work with Lital to improve my resume
3. Work with Lital to secure an internship (hopefully skip this step)
4. Daven to Hashem I aquire a position to complete the career transition.
5. Thank Hashem upon receiving an job offer