



//Developers_Institute_ TLV Coding Bootcamp

Graduation Rates of American Universities

Developers Institute ranked for
Best Coding Bootcamp
Worldwide for 2023



Developers.Institute
Intense, career-oriented courses

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>
- Originally 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 Carnegie Classification, and 4 year institutions
- Final dataset is about 1500 Rows and 130 Columns

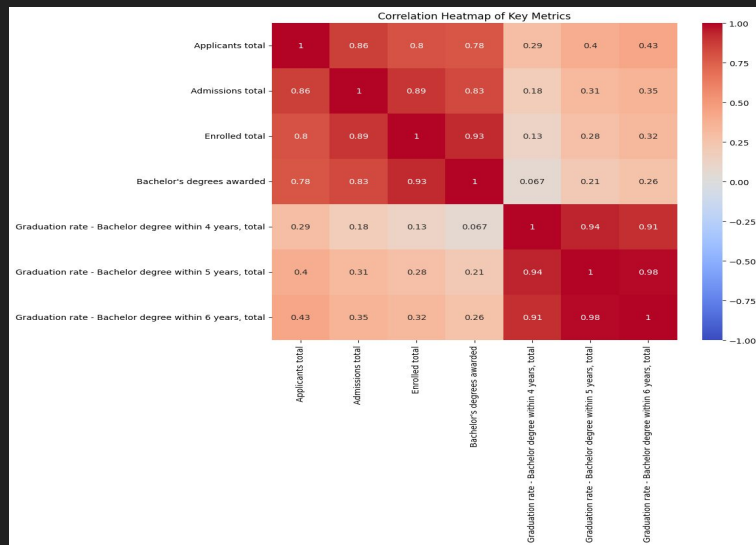
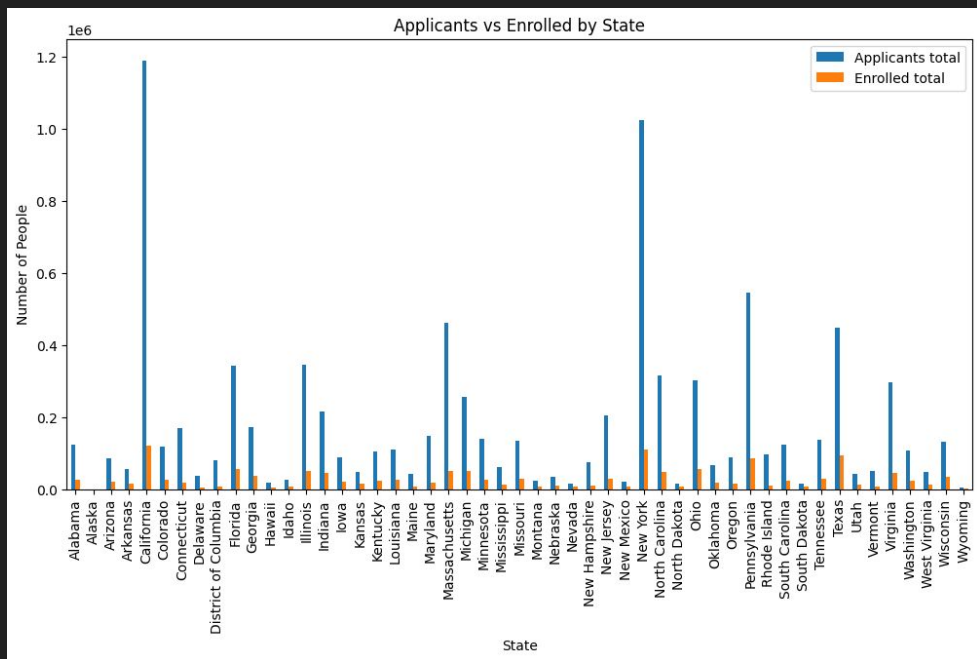
Objective

- 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 model based on how many people applied, got admitted, and then 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

The screenshot displays the Trello workspace interface. The top navigation bar includes the Trello logo, 'Workspaces' dropdown, 'Recent', 'Starred', 'More' dropdown, a blue '+' button, a search bar, and icons for notifications, help, and a user profile (SD). The left sidebar shows the 'Trello Workspace Free' header, followed by 'Boards', 'Members', 'Workspace settings', and 'Workspace views' with a 'Table' view option. A Jira promotional banner is visible in the sidebar. The main workspace area is titled 'DI_FinalProject' and features a 'Board' view. The board is organized into four columns: 'Explore Data', 'Dashboards', 'Prediction Modeling', and 'Summary and Power'. Each column contains several cards with tasks related to data exploration, dashboard creation, and model prediction. The 'Explore Data' column includes cards for finding data via Kaggle, finding API or webscrape IPEDS data, looking at and exploring data in Excel and SQL, using Pandas and Numpy to further explore the data, deciding what to focus on, and cleaning the data via pandas to make the data more digestible and pick. The 'Dashboards' column includes cards for rates by region and financial data (tuition, fees) for public vs. private schools, comparison of overall graduation rates to US Service schools, graduation rates by demographic factors (race, ethnicity, gender), and creating a filter to show specific. The 'Prediction Modeling' column includes cards for creating a predication model to show the anticipated graduation rates, comparing the predication model to real data to see if it is accurate, and an 'Add a card' button. The 'Summary and Power' column includes cards for summarizing the findings, giving support how to a issue, a 2 minute video of proj, Powerpoint Presentation, uploading work to Github, uploading work to Portfo, writing an article, and an 'Add a card' button. The bottom of the interface shows a 'Upgrade to Trello Premium' button.

Trello Workspaces Recent Starred More + Search

Trello Workspace Free

Boards Members Workspace settings

Workspace views Table

Jira keeps your projects organized

Jira's customizability and structure makes handling all your team's projects and processes a breeze.

Get started

Upgrade to Trello Premium

DI_FinalProject ☆ Board

Filters SD Share

Explore Data

- Find Data via Kaggle
- Find API or webscrape IPEDS data
- Look at and explore data in Excel and SQL
- Use Pandas and Numpy to further explore the data
- Decide what to focus on
- Clean the data via pandas to make the data more digestible and pick
- + Add a card

Dashboards

- rates by region and financial data (tuition, fees) for public vs. private schools
- Comparison of overall graduation rates to US Service schools (look into the differences between these types of schools to better understand why they are so different)
- Graduation rates by demographic factors (race, ethnicity, gender)
- Create a filter to show specific
- + Add a card

Prediction Modeling

- Create a predication model to show the anticipated graduation rates
- compare the predication model to real data to see if it is accurate
- + Add a card

Summary and Power

- Summarize the finding
- Give support how to a issue
- 2 minute video of proj
- Powerpoint Presentation
- Upload work to Github
- Upload work to Portfo
- Write an article
- + Add a card

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:

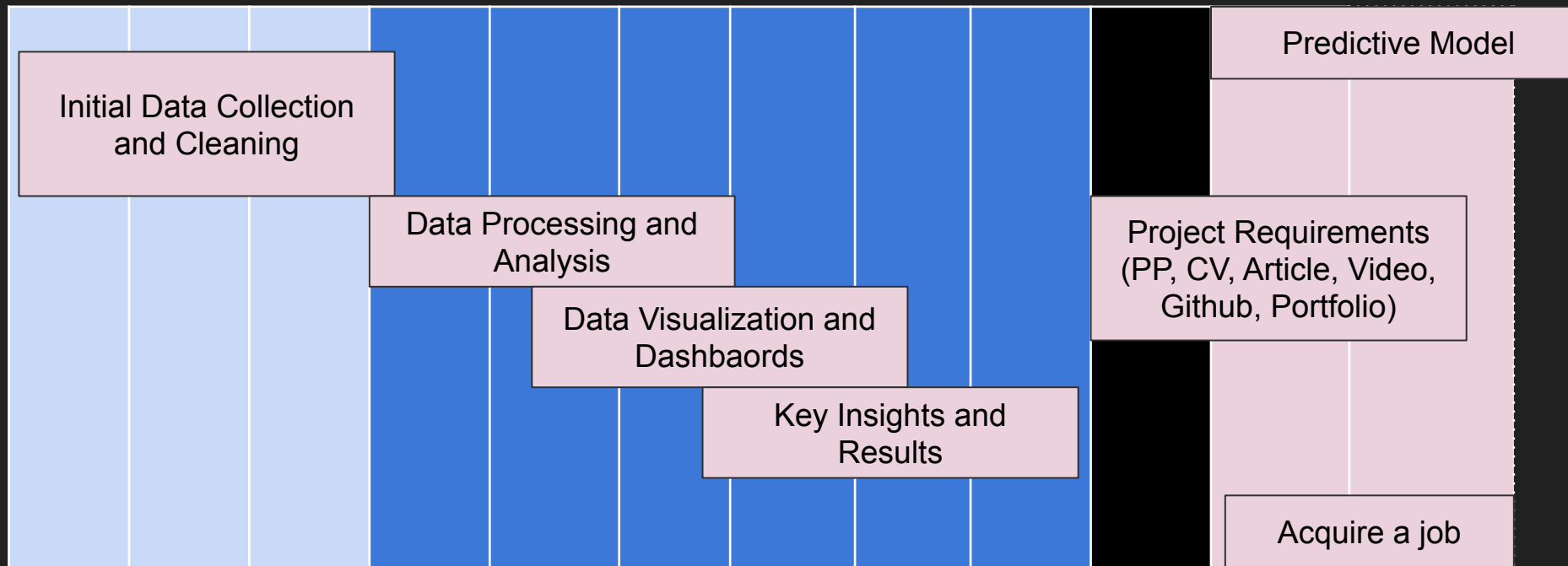
Career Prep

CV link: [Drucker CV](#)

Linkedin link: [Linkedin](#)

Job tracker link: [DI Job Tracker](#)

Roadmap



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 acquire a position to complete the career transition.
5. Thank Hashem upon receiving an job offer