Patrick Nichols

240-595-0929 • pnichols1010@gmail.com • Rockville, MD • https://penichols10.github.io/

KEY SKILLS

Data Analytics • Data Cleaning • Machine Learning • Web Scraping • Probability • Statistics

TECHNICAL SKILLS

SQL • Tableau • Excel • Power BI • Python • Pandas • scikit-learn • Beautiful Soup • numpy • XGBoost TensorFlow • Gensim • NLTK • Flask

EDUCATION

UNIVERSITY OF MICHIGAN LAW SCHOOL	Ann Arbor, MI
Juris Doctor	May 2020

Carnegie Mellon University	Pittsburgh, PA
Bachelor of Science in Physics	May 2017

PROJECTS - More projects are available on my website, above.

SPEED DATING STUDY ANALYSIS
LINK TO REPOSITORY

- Cleaned results from a speed dating study at a university in Excel, using functions like XLOOKUP, IF, AND, and ISBLANK.
- Summarized the data with pivot tables and pivot charts, using a VBA script to convert aggregate functions from sums to averages.
- Determined that match rates differed across demographics and that partners rated their dates higher across several characteristics if a date ended in a match.

MONTGOMERY COUNTY ALCOHOL VIOLATION ANALYSIS
LINK TO REPOSITORY | *LINK TO DASHBOARD*

- Extracted useful features from arbitrarily constructed string descriptions of alcohol license violations using regular expressions and string methods in Python.
- Created a dashboard inTableau to visualize where license violations were most likely to occur, which types of violations were most common, and which types of violations received the largest fines on average.
- Determined that while alcohol sales to minors are the most common alcohol license violations in Montgomery county, they do not, on average, receive the highest fines.

BATTLEFIELD PLAYER DATA SCRAPING AND STORAGE
LINK TO REPOSITORY

- Scraped player data by making requests to an API used to make AJAX requests..
- Stored the scraped data in a relational database for use in further analysis.
- Wrote and saved SQL queries to easily retrieve useful information about the data.

SPOTIFY ANALYSIS AND CLASSIFICATION
LINK TO REPOSITORY

- Retrieved my "Liked Songs" playlist and the audio features for each song using the Spotify API.
- Segmented the song into classes using k-means classification and evaluated the clusters.
- Wrote a classification pipeline to retrieve new songs from the Spotify API and either classify them using a support vector machine or flag them as potential outliers using distances from cluster centers.

WORK EXPERIENCE

VINSON AND ELKINS LLP   Houston, TX
Associate   January - August, 2021
- Advised a client's general counsel on which commercial contracts were disclosable under its respective confidentiality provision.
- Coordinated with specialist teams to guide and consolidate their timely review of complex documents.
- Reviewed and revised commercial documents related to mergers, acquisitions, debt offerings, and equity offerings.

VINSON AND ELKINS LLP   Houston, TX
Summer Associate   June - August, 2019
- Researched case law and wrote memoranda discussing an unresolved issue related to arbitration forums.
- Analyzed prior art and performed patent infringement analysis related to a patent describing a computer vision system.
- Advised a pro bono client on updates to Texas schools' vision screening requirements.

FIRST COURT OF APPEALS OF TEXAS   Houston, TX
Summer Intern   May - July, 2018
- Wrote memoranda to be used as initial drafts of judicial opinions.
- Reviewed draft opinions and proposed rules for substantive and stylistic citation errors.
- Implemented staff attorney's edits after receiving edited versions of written documents.

CARNEGIE MELLON UNIVERSITY   Pittsburgh, PA
Student Research Assistant in Philosophy   January - May, 2017
- Researched the American legislative process to demonstrate that the principles of deliberative democracy could be used to supplement it.
- Advocated for the modification of govtrack.us so the website could be used to connect deliberative events with the currently existing legislative process.
- Wrote a paper and oral presentation summarizing my work.
- Presented work as a poster presentation to a potential donor and received funding for future research.

CARNEGIE MELLON UNIVERSITY   Pittsburgh, PA
Student Research Assistant in Physics   May - September, 2016
- Determined that dim galaxies tended to be close to galactic filaments rather than randomly distributed.
- Analyzed histograms of galaxies' brightnesses to select a brightness below which a galaxy is considered dim.
- Applied a ridge finding algorithm to find filaments using the brighter galaxies.
- Compared the distance of dim galaxies to the filaments to the distance of random points to the filaments.