Nathaniel Mackler

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ABOUT

I'm a UCSD graduate passionate about data analytics, with a foundation in machine learning. Originating from an economics background, I discovered my love for data analysis through studying economic data. I bring a blend of analytical and mathematical skills with technical proficiency, which I'm eager to contribute.

TOOLS

Python (Pandas, NumPy, SKlearn, PyTorch, NLTK, Seaborn)
R (ggplot, tidyverse), Tableau, SQL, Microsoft Excel

EDUCATION

UC San Diego – BS, Cognitive Science, Machine Learning and Neural Computation – 3.64 GPA June 2023

- Relevant Coursework includes:
  - Probability & Statistics
  - Data Visualization with R & Tableau
  - Object-Oriented & Functional Programming
  - Time-series Analysis

Foothill College – AA with Honors, Economics – 3.49 GPA December 2019

- Relevant Coursework includes:
  - Mathematics & Economics
  - Computer Science, including Java & Python

PROJECT EXPERIENCE github.com/nmackler

Analyzing the Effect of Marijuana Legalization on CDL Pay *Personal Project* August 2023 – Present

- In-progress report visible at nmackler.com/cdlpay
- Used beautifulsoup to webscrape a dataset with the years of legalization of marijuana across all 50 US States
- Using ETL Processes to sync data from divergent sources, merging 20+ years of federal data into one coherent, tidy dataset using Pandas
- Condensed and exported all data as a table into R for final analysis
- Final results TBD due to limited size of dataset; looking for data from other nations which may be comparable before performing a difference-in-differences analysis.

Determining Likelihood of Injury for NBA Players *COGS 118A - Supervised ML* January 2023 – March 2023

- Completed report visible at nmackler.com/nba
- Used NLP techniques to extract binary injury data from a collection of news reports on NBA player injuries
- Used the NBA API to extract relevant data across thousands of players and two decades of play.
- Performed feature and model selection with cross-validation across dozens of features, using KNN, Random Forest, and Logistic Regression Models
- Developed a model that performed better-than-random using a custom F1-beta error metric when presented with a full season's worth of play.

The Effects of Light Rail Extensions on Transit Ridership *COGS 108 - Data Science* September 2022 – December 2022

- Completed report visible at nmackler.com/transitdata
- Extracted and cleaned information using Pandas and NumPy from an FTA database to evaluate the effect on transit ridership across modes when new extensions of a light rail line were opened
- Using established statistical techniques, found no significant impact on ridership of modes other than the one being extended - although limited by the small number of cities we analyzed

An Analysis of Alternatives to GDP *Personal Project* September 2019 – March 2020

- Completed report visible at nmackler.com/gdp
- Collected survey data on metrics considered important in a potential replacement to GDP as a human progress indicator
- Used Python to analyze an OECD data set containing 300+ data points across 20+ countries
- Demonstrated that individuals' chosen metrics for countries result in very different rankings for countries, proving that indicators like the World Happiness Index do not necessarily capture a more complete or universally-applicable picture than GDP

WORK EXPERIENCE

UC San Diego Department of Cognitive Science 12-20 hours per week

Instructional Apprentice January 2023 – June 2023

- Spring 2023: Hosted office hours and responded to all Campuswire posts for students with programming difficulties in COGS 108: Data Science in Practice. Course material taught includes intros to pandas, statistical tests in SciPy, NLTK, and Seaborn. Responsible for reviewing & giving feedback to student groups on dozens of data analyses.
- Winter 2023: Taught 1 hour/week for a section of 70 students in COGS 101A: Sensation & Perception. Responsibilities included preparing all section materials including quizzes and slides, as well as assisting with writing and grading course-wide exams. Received 100% positive feedback: "excellent at making the material easy to understand","very professional".

UC San Diego Triton Transit 20-30 hours per week

Student Manager September 2021 – August 2023

- Worked directly with the General Manager of Triton Transit to develop a static General Transit Feed Specification (GTFS) for public distribution from the proprietary system developed by TransLoc for our agency
- Utilized Excel and proprietary scheduling system to manage seniority-based schedule bid for 50+ employees
- Managed schedules for 50+ employees, monitored 9 fixed-route buses and on-demand service with 95+% reliability, and ensured legal compliance with local, state, and federal regulations
- Managed Kanban-style processes for service improvements and public communication
- Trained new hires on non-commercial vehicles, including vehicle familiarization and department policy

Alum Rock & San Jose School Districts 32 hours per week

Special Education Paraprofessional January 2020 – August 2021

- Worked with an interdisciplinary team to manage classrooms of 5-18 children with special needs
- Tracked student progress and prepared detailed reports for parents, caseworkers, and other stakeholders

Opya Care 20 hours per week

Registered Behavior Technician May 2019– January 2020

- Applied data-driven applied behavior analysis techniques (ABA) in direct, one-to-one therapy with autistic children ages 2-17

AWARDS

Celebration of Excellence Scholarship Recipient June 2020

Foothill College, Department of Business and Social Sciences