Zachary Mackin

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Experience

Pacific Gas & Electric / Data Engineering Intern
May 2023 - Present

- Collaborate with a team of engineers to develop and implement data pipelines for the Public Safety Power Shutoff team and reduce the risk of catastrophic wildfires.
- Automate manual processes using scripting languages (e.g., Python) to enhance data processing efficiency and reduce manual errors.
- Work closely with cross-functional teams to understand business requirements and translate them into scalable data engineering solutions.

Center for Human Sleep Science / Machine Learning Researcher
January 2023 - May 2023

- Worked as a machine learning researcher on a deep learning model for forecasting sleep data.
- Employed various time series models to develop novel approach to the sleep regression problem.

UC Berkeley EECS Department / Machine Learning Researcher
August 2022 - December 2022

- Worked on a research team creating a more effective UAV for the DARPA SymCPS competition.
- Employed Python and AWS to develop more effective Deep Learning models to develop the UAVs.

Chesapeake Legal Alliance / Software Developer
January 2022 - June 2022

- Explored and processed data on the land use loading rate within the Chesapeake Bay.
- Developed a mapping application and additional explanatory materials using ArcGIS and Python to display this data, which has been used by the government of Maryland.

The Economist Intelligence Unit / Data and Research Analyst
August 2021 - January 2022

- Collaborated with team members to strengthen a model predicting a country's risk of defaulting and presented findings in a clear and concise manner
- Improved a model that classified a country's risk of default such that it outperformed competitors.

University of California, Berkeley / Instructor and Tutor
May 2021 - PRESENT

- Educate students in introductory mathematics, statistics, and data science courses.
- Currently serve as a uGSI for Data 8 (foundations of Data Science).
- Communicate various difficult topics in an effective way to a variety of learners. Able to simplify and explain complicated subjects to an understandable level.

Education

University of California, Berkeley
May 2024

Bachelor of Arts in Computer Science and Statistics

GPA: 3.831

Relevant Coursework: Principles & Techniques in Data Science, Data Structures, Probability and Mathematical Statistics in Data Science, Economic Models in Data Science, Calculus, Multivariable Calculus, Linear Algebra and Differential Equations, Machine Learning, Optimization Models in Engineering, Algorithms, Deep Learning, Linear Modelling, Real Analysis, Data Engineering

Skills & Projects

Programming Languages: Python, R, Java, SQL, Regex

Libraries and Frameworks: Numpy, PySpark, Pandas, GGplot, SKLearn, Seaborn, Matplotlib, PyTorch, Tensorflow

Gitlet: Used Java to build a version control system that tracks and commits file changes, reverts and adds to and from previous versions, efficiently searches and tracks data, and creates branches.

College Basketball: Webscraped College Basketball Data, then developed a Deep Learning model with strength of schedule adjustments that outperforms ESPN's model in predicting college basketball games.

Adversarial Machine Learning: Looked at various techniques to defend a deep neural network against adversarial examples, implementing methodologies from various papers such as "Fighting Gradients with Gradients: Dynamic Defenses against Adversarial Attacks".