Zachary Mackin

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Experience

Pacific Gas & Electric / Data Engineering Intern

May 2023 - Present

- Collaborated 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.
- Automated manual processes using scripting languages (e.g., Python) to enhance data processing efficiency and reduce manual errors.
- Worked 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

- Machine Learning Researcher working on a deep learning model to forecast sleep data.
- Employing various time series models to develop novel approach to the sleep regression problem.

UC Berkeley EECS Department / Machine Learning Researcher

August 2022 - December 2022

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

Chesapeake Legal Alliance / Software Developer

January 2022 - June 2022

- Responsible for exploring and processing 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 that has been used by the government of Maryland.

The Economist Intelligence Unit / Data and Research Analyst

August 2021 - January 2022

- Collaborating 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

- Educator for introductory mathematics, statistics, and data science courses.
- Presently uGSI for Data 8 (foundations of Data Science).
- Learned how to 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: Foundations of Data Science, Data Structures, Structure and Interpretation of Computer Programs, Probability and Mathematical Statistics in Data Science, Economic Models in Data Science, Calculus, Multivariable Calculus, Linear Algebra and Differential Equations, Introduction to Machine Learning, Optimization Models in Engineering, Algorithms, Deep Neural Networks, Linear Modelling

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".