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EDUCATION

UNIVERSITY OF CALIFORNIA—SANTA BARBARA September 2021-June 2025

Double Major: B.S. in Computer Science, B.S. in Data Science and Statistics – 3.8/4.0 GPA

- *Relevant Coursework:* Data Structures and Algorithms, Deep Learning/Machine Learning, Database Systems/SQL
- *Honors*: UC Regents Scholar (top 1% all admits), UCSB College of Engineering Honors (top 10% engineering admits)

EXPERIENCE

PRINCIPAL FINANCIAL GROUP June 2023-September 2023

Software Engineering Intern

- Led the design and implementation of a full-stack process that modernized how Principal generates large statistical reports on its owned investments, saving >100 hours per usage
- Built frontend with Next.js, backend with AWS Lambda, SQS, additional REST API built with Java Spring
- Designed efficient event-driven architecture with parallel processing that was 3x faster than original
- Deployed app to production for business client use in following quarter
- Additional experience building survey distribution and collection services with ServiceNow
- Core Skills: *React, Typescript, AWS, Java, Full Stack Development*

UCSB SYSTEMS AND NETWORKING LAB September 2022-June 2023

Undergraduate Research Assistant

- Explainable AI Research in networking: trained, evaluated neural networks for network intrusion detection with PyTorch
- Extracted model logic with novel framework that trains surrogate, easily readable decision trees on neural networks
- Used Python to build custom decision tree splitting and pruning for better readability of output
- Demonstrated that several highly cited modern network datasets, especially synthetic ones, have subtle but exploitable shortcut features resulting in poor performance on out-of-sample data
- Core Skills: *Python, PyTorch, Machine/Deep Learning, Data Visualization*

PROJECTS

Vrchery | *Virtual Reality, Unity, C#*

- Used Unity, Unity XR Interaction Toolkit to build a realistic virtual reality archery simulation
- Used C# scripts to implement bow-and-arrow control with VR controllers (realistic pulling and aiming), as well as realistic arrow physics, haptic VR controller feedback, animations, and audio

Transformers for Named Entity Recognition | *NLP, Python, PyTorch, HuggingFace*

- Trained transformer encoders to tag words in English text as names, locations, etc.
- Used PyTorch to implement tokenizer, positional encoder, custom transformer architecture
- Also used HuggingFace to load and finetune pretrained BERT weights for same task to achieve stronger results

CelebA Smile Classification | *Computer Vision, Python, PyTorch*

- Trained convolutional neural networks to classify images of celebrity faces as smiling or frowning
- Used PyTorch to finetune EfficientNet and ResNet pretrained weights on a portion of the CelebA Celebrity Face Dataset
- Employed data augmentation techniques for better usage of a small dataset, achieved .94 accuracy

Improved Course Registration | *Full-Stack Dev, React, Java, Spring, REST API*

- Used React and Java Spring to develop an improved app for searching and registering for courses at UCSB
- Experience with Test Driven Development, usage of JUnit and Mutation Testing

Predicting San Francisco Crime | *Full-Stack Dev, HTML, CSS, JS, Java, Google Cloud*

- Built a full-stack web app that leverages ML and historical data to predict high-crime locations in San Francisco
- Used Python, Sklearn to train Bayesian models on the San Francisco OpenData Police Incident Database and predict crime activity based on time of year, location, neighborhood, etc.
- Built webpage with HTML, CSS, JS, and Google Firebase; used Google Cloud and Google Maps API to visualize results

TECHNICAL SKILLS

Development Areas: DevOps, Full-Stack Development, Machine Learning, Deep Learning, Data Analytics
Languages: Java, Typescript, JavaScript, Python, C++, SQL, R
Frameworks and Tools: React, Next.js, PyTorch, Unity, Numpy, Pandas, Matplotlib, Spring, NPM