JACK NEWSOM

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EDUCATION

UC Berkeley College of Engineering **Berkeley, CA**

Master of Science in Electrical Engineering and Computer Sciences Expected May 2021

- Cumulative GPA: 4.0/4.0
- Thesis: Learning Optimal Models for Overlapping Segmentation Problems
- Relevant Coursework: Statistical Learning Theory, Deep Reinforcement Learning, Decision Making, and Control

Bachelor of Science in Electrical Engineering and Computer Sciences Graduated August 2020

- Cumulative GPA 3.9/4.0
- Awards, Distinctions: University Prize Nominee, EECS Honors Program
- Relevant Coursework: Designing, Visualizing and Understanding Deep Neural Networks, Introduction to Machine Learning, Structure and Interpretation of Computer Programs, Designing Information Devices and Systems, Discrete Mathematics and Probability Theory

RELEVANT EXPERIENCE

Lawrence Berkeley National Lab **Berkeley, CA**

Graduate Student Researcher August 2018 - Present

- Applying neural architecture search to identify optimal models for three dimensional segmentation problems
- Created model to cluster neutrino interactions at 98% accuracy using PyTorch and NumPy
- Optimized PyTorch models to run on NERSC's Cori compute cluster
- Designed data pipeline to convert data from obscure data formats like ROOT to HDF5 for ultra-fast processing

Grapevine **San Francisco, CA**

Software Engineer May 2020 - Present

- Created backend web app with tools for making complex queries on and moderation of user data using Flask, NodeJS to better understand user acquisition for startup with app published to Apple App Store
- Implemented and created interfaces for Firebase and PostgreSQL databases for storing complex data used for app analytics

Ranade Misinformation Studies Group **Berkeley, CA**

Student Researcher for Prof. Gireeja Ranade and Dr. Michael Tschantz May 2019 - August 2020

- Used NumPy to create a hidden semi-Markov model of political misinformation and how it propagates
- Created tools for storing and making queries on information exposed to malicious servers by messaging services including WhatsApp and Snapchat using Flask and PostrgreSQL
- Implemented data pipeline to extract large amounts of data from WhatsApp logs on device

TEECOM **Oakland, CA**

Research and Development Intern June 2018 - August 2018

- Designed a fast convolutional autoencoder for labeling people in HD video with Tensorflow, part of a software suite for reducing power use in offices
- Implemented data pipeline to apply preprocessing to images for training ML model using NumPy, Pandas
- Designed a software and hardware solution to save drawings on whiteboards using Microsoft Graph and Slack APIs and IR touch frame

PROJECTS

AutoHAS - open source implementation of model and hyperparameter search technique in PyTorch

DVTutors - small web app made with Flask and WebRTC that allows peer-to-peer video for tutoring

UResNet - PyTorch model using sparse convolution optimized for deployment on Cori supercomputing cluster

hurricane-helper - Twilio-based web app to send useful information to people affected by hurricanes over SMS

SKILLS

Operating Systems and Tools: Unix/Linux, MacOS, Windows, LaTeX

Programming Languages: Python, C++, Javascript, Swift, Go, R

Libraries: Tensorflow, PyTorch, Flask, Node, NumPy, ReactJS

HONORS, AWARDS, AND COMMUNITY SERVICE

Eagle Scout, Tau Beta Pi Member, Volunteer Tutoring Club Founder and President