Zane Alumbaugh

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EDUCATION

University of California, Santa Cruz September 2017-Present

Santa Cruz, California

- Bachelor of Science in Computer Science (expected Spring 2021)
- Achievements: UCSC Dean's Honors List – Spring 2020, Winter 2020, Winter 2018

COMPUTER SKILLS

Languages

- Proficient in: Python, C/C++, Golang, HTML/CSS, Java
- Familiar with: JavaScript, Scala, Prolog, Haskell, SQL, Postgres

Software

- APIs/Libraries/Frameworks: PyTorch, Django, Bootstrap, Numpy, Pandas, SciPy, Matplotlib
- Software: Windows, Unix, Git, Docker

EXPERIENCE

Student Research Assistant/Python Developer June 2020-Present

University of Washington

- Implement action policies for Reinforcement Learning Linear Quadratic Systems and extend their application to a multiplayer environment.
- Update policy gradient algorithm to multiplayer environment using OpenAI's existing Vanilla Policy Gradient and PyTorch.
- Co-author in: "Liyuan Zheng, Tanner Fiez, Zane Alumbaugh, Benjamin Chasnov and Lillian Ratliff (2020), Stackelberg Actor-Critic: A Game-Theoretic Perspective," and "Stackelberg Actor-Critic: Game-Theoretic Reinforcement Learning Algorithms."

Freelance Software Engineer July 2020

BuddhiBox

- Created a bot that scrubs daily emails from "Help a Reporter" (HARO) and picks out links containing relevant key words and phrases. The bot then notifies the user via email with only the relevant links. Implemented using Python, Beautiful Soup, and Google's official Gmail API.

Student Research Assistant/Python Programmer July 2019-September 2019

University of Washington

- Implemented gradient-based learning algorithms for training Generative Adversarial Networks (GANs) using the PyTroch Framework.
- Implemented an optimizer class for PyTorch that used second-order derivatives to predict future optimizations and allowed for the learning agent to act on these predictions.
- Built foundations for a novel approach to accelerate the GAN learning process by leveraging the eigen structure of the Jacobian of the learning dynamics.

Website Developer February 2019

Bay Area Geophysical Society (BAGs)

- Created current BAGs website from scratch. Employer requested a barebones static implementation. Used HTML, CSS, and minimal JavaScript.

References available upon request.