TEERATHAM (TJ) VITCHUTRIPOP

(804)-928-4949 | tv9fm@virginia.edu
232 Harrison, Charlottesville, VA 22904

EDUCATION

University of Virginia, School of Engineering and Applied Science | Charlottesville, VA — May 2024
Majors in Computer Science and Philosophy
GPA: 3.876
Relevant Coursework: Machine Learning; Robotics for Software Engineers; Linear Algebra; Probability; Statistics; Multivariable Calculus; Algorithms; Program and Data Representation; Introduction to Non-Classical Logic; Consciousness

WORK EXPERIENCE

Collaborative Robotics Lab — *Undergraduate Researcher* — Aug. 2021 – Present

- Received competitive Double Hoo Award by the UVA Office of Undergraduate Research to fund research project on applying reinforcement learning (RL) techniques to human-robot collaboration.
- Proposed and developed in PyTorch a novel RL algorithm that addresses the representation learning bottleneck of state-of-the-art algorithms and improves upon the performance of other evaluated algorithms (e.g., SAC, DDPG, REDQ).
- Conducted experiments in OpenAI Gym with MPI parallelization to benchmark RL algorithmic performance using an HPC cluster, Singularity, and Slurm, while tracking performance using Weights and Biases.
- Developed behavior trees for robotic control in ROS Melodic using PyTrees.
- Selected to give an oral presentation on research at the 2023 ACC Meeting of the Minds (1 of 5 undergraduate researchers chosen to represent UVA at the conference).
- Received Best Oral Presentation at 2023 Undergraduate Engineering Research and Design Symposium.
- Received the UVA Computer Science Department's 2023 Outstanding Undergraduate Research Award

National Science Foundation — *Policy and Data Science Intern (UVA-MIT Policy Internship Program)* — June 2022 – Feb 2023

- Contributed towards efforts to publish and open-source innovation and entrepreneurship application data for the NSF Engines program, developing data cleaning pipelines in Python, data visualization prototypes with Google Maps API, and a public-facing database for applicant collaboration in Airtable used by 5000+ users and featured in multiple publications (e.g., Heartland Forward, SSTI)
- Applied large language models and natural language processing techniques with spaCy and NLTK for entity extraction on records and reports to discover companies/startups formed from or that have benefitted off of NSF-funded research.
- Researched evaluative metrics for the health of innovation ecosystems across the US.
- Wrote memos, created data visualizations, and crafted presentations to support Engines program goals.

Cosaic — *Software Engineering Intern* — June 2021 – Aug. 2021

- Designed headless UI unit tests for React components using Mocha and Enzyme in TypeScript (increasing coverage from 0% to 50%).
- Created end-to-end regression tests for 2 different parts of the product using Selenium and Cucumber.
- Refactored existing legacy React components, converting them to TypeScript for build-time type safety and importing them into Storybook to support modular testing.

CS 2120 Discrete Mathematics — *Teaching Assistant* — Feb. 2021 – Present

- Planned and co-taught lecture on quantifier logic and entailment to 100+ students.
- Guide and support students with questions on course content during office hours and after lectures.
- Strategize with professors and other teaching assistants about the most optimal way to deliver class content.

ACTIVITIES & VOLUNTEER EXPERIENCE

HooHacks — *Marketing Committee Co-Chair* — Sept. 2020 – Present

- Collaborate with HooHacks executive board and lead committee members on planning marketing campaign and strategy for HooHacks, UVA's premier student-run hackathon with 1000+ participants.
- Created and deployed a React and Node.js web application that would allow members to easily send emails advertising events by launching the default email client with a customized email.
- Established stronger relationships with organizations for underrepresented groups in STEM to improve diversity at events.

Charlottesville Debate League — *Head Teacher* — Sept. 2020 – Present

- Mentored 30+ middle school students on extemporaneous speaking and public forum debate.
- Discuss with teachers on best ways to implement curriculum and maintain high student engagement.
- Analyze effective teaching strategies from Charlottesville Debate League teachers at 10+ schools.

SKILLS & LANGUAGES

- Experienced with following languages and frameworks: Python, Java, JavaScript, TypeScript, C++, C, PyTorch, Tensorflow & Keras, ROS, OpenAI Gym, Scikit-Learn, Numpy, Pandas, PyTrees, React, Node.js
- Experienced with following tools: GitHub, Bitbucket, Docker, Weights and Biases, Singularity, Slurm, Visual Studio Code, JupyterLab, Linux, Airtable, Excel, MATLAB, Autodesk Fusion 360