Govind Pimpale

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Education

University of California, Los Angeles Exp. Fall 2024 | GPA: 3.874

Major: B.S. Computer Science and Engineering

Coursework: Data Structures, Programming Languages, Operating Systems, Distributed Systems, Computer Network Fundamentals, Compiler Construction, Machine Learning, Linear Algebra, Statistics

Technical Skills

Languages: Python, C++, Rust, Java, Javascript, Typescript, SQL, CUDA

Web Technologies: ReactJS, PostgreSQL, MySQL, SQL Server, Spring Boot, Dropwizard, Nginx, Express.js, Flask, OpenAI API, Discord API WebGL, Three.js, OpenGL, Vulkan, GLSL, Unity, Pytorch, Tensorflow, Keras, OpenCV

Developer Tools: Git, VS Code, AWS, PyCharm, Jupyter Notebook, Docker, Linux

Experience

Lacework | lacework.com June 2023 – September 2023

Software Engineering Intern *Mountain View, CA*

- Improved user experience by creating an in-app portal to report errors and issues with the Lacework platform. This feature automatically creates corresponding customer support tickets on Zendesk whenever a user reports an issue.
- Collaborated with the customer support team and the UX team to develop the design for the tool. Worked with both the front end and back end teams to implement the tool using React, Java, and PostgreSQL.
- Designed and implemented new components for the Lacework UI library using React and Typescript.

ARC Evals | evals.alignment.org July 2022 – September 2022

Software Engineering Intern *Berkeley, CA*

- Improved the tools researchers utilize to interact with LLM agents by adding live updates to the web interface, so that researchers can view the results of their experiments in real time. Used Websockets, React, Flask, and OpenAI API.
- Increased performance of LLM agents by improving prompting strategies and adding heuristics to select the best completion.

Atlas Fellowship | atlasfellowship.org May 2022 – July 2022

Software Engineering Intern *Berkeley, CA*

- Implemented a Discord bot to allow participants to make bets using Manifold Markets. Used Node.js and Firebase.
- Created an online tournament platform for people to compete Python bots that play iterated prisoner's dilemma. Implemented using Docker API, Postgres, Rust, Typescript, and React. (github.com/pimpale/pdarena)

Innexgo | pimpale.github.io/innexgo_technology August 2018 – August 2022

Cofounder *San Jose, CA*

- Designed and built a IoT device to monitor student attendance, as well as a web app to provide teachers with attendance analytics, leading a team of eight developers.
- Used by ∼2000 students at my high school, and received thousands of dollars of funding from our school district.
- I used KiCAD to design the PCBs, C++ on the ESP32, and React, Typescript, Java, MySQL for the analytics platform.

Research

Visual Machines Group | visual.ee.ucla.edu September 2023 – Present

Machine Learning Researcher *UCLA*

- Designed and implemented a neural network to predict gaze direction using pictures of the eye from inside a virtual reality headset. The model achieved a total angular error of only 0.85 degrees.
- Conducted research on using gaussian splatting to automatically create convolutional neural network (CNN) layers for 3D data. Used C++, CUDA and Pytorch.

Bolei Zhou Lab | boleizhou.github.io March 2023 – Present

Machine Learning Researcher *UCLA*

- Designed and trained an inverse dynamics model (IDM) to predict car steering input from velocity data. Used the IDM to create an offline reinforcement learning dataset, and benchmarked offline RL algorithms on the dataset.
- Wrote a sequence of reinforcement learning tutorials to teach students policy gradients, deep Q-Networks, TRPO, and PPO using the Metadrive environment. (github.com/pimpale/mdt)

Projects

Omegasus | github.com/pimpale/omegasus Jan 2023 – March 2023

- Created a deep neural network simulation of the popular game Among Us using Reinforcement Learning and GPT-2.
- Implemented PPO to train both the crewmates and the imposters to make decisions based on the game state.
- Fine-tuned GPT-2 to simulate chat messages from players that depended on the game context.

WebGL Voxel Game | github.com/pimpale/webgl-voxel-game April 2022 –June 2022

- Created a voxel game engine based off of Minecraft using only WebGL and Typescript.
- Implemented a chunk system, transparent blocks, lighting, shadows, and a basic physics engine.

Compugenesis | github.com/pimpale/compugenesis September 2018 – March 2019

- Created a GPU-accelerated simulation of the growth of various real world crops.
- Simulated soil minerals using a 3D grid of voxels, and plant growth with L-systems. Accelerated using GLSL compute shaders.
- Won Grand Prize at the 2019 Synopsys Science and Technology Championship, and 3rd place at the 2019 Intel International Science and Engineering Fair