

Aditya Kunatharaju
San Francisco, CA

Phone: (415) 999-0174

Email: aditya17varma@gmail.com

Website: <https://aditya17varma.github.io>

LinkedIn: www.linkedin.com/in/adityakunatharaju

EDUCATION

University of San Francisco – (May 2024)

Master's in Computer Science

Relevant Coursework: Machine Learning, Network Programming, Discrete Math, Data Structures and Algorithms, Modern Parallel Programming, AI, Human Computer Interaction, Full-Stack Web Development.

GPA: 3.82 / 4.00

University of California, Los Angeles

Bachelor of Arts

Major GPA: 3.70 / 4.00

WORK EXPERIENCE

Software Engineering Intern, Openprise - (4 months)

- Developed an Auto Cloud Deployer for deploying containerized applications to 3 providers: GCP, AWS, and Azure.
- Deployment process allowed for scalability by deploying to multiple containers. Plug-in architecture enables users to add support for more cloud providers. Cut down deployment time by ~75%.
- Incorporated team wide SDLC best practices such as version control (git), CI/CD testing & deployment, and Agile.
- Led weekly communications between a multi-site team and project lead to update progress and chart next steps.

Tutor, University of San Francisco - (August 2023 – current)

- CS and applied business technology for USF student athletes. Collaborated with a team to build study plans, resulting in 100% of students achieved academic goals.

Teaching Assistant, University of San Francisco - (August 2022 – current)

- TA for Machine Learning, AI, Object Oriented Programming.

RELATED PROJECTS

Auto-Integrate (OpenAI, GPT-4, AutoGen, Python, Django)

- Built custom multi-agent frameworks using GPT-4 to scrape documentation and map data between applications.
- Utilized prompt engineering to define the roles of each agent for specific roles, and control output format. Roles included semantic understanding, schema analysis and data formatting.
- Automated data integration by decreasing manual mapping by an average of ~80%.

Federated Machine Learning (Python, PyTorch, Rust)

- Concurrently trained a machine learning model on data isolated on 5 dispersed network nodes. Safeguarded data privacy by implementing node-level isolation.
- Spearheaded the design and execution of a distributed machine learning system, leveraging training nodes to share model updates with a coordinator node for effective aggregation and redistribution of the learned model.
- On the MNIST dataset, using a neural network, accuracy scores were within 3-5% of a consolidated model.

Golf Swing Pose Detector (Python, OpenCV, Mediapipe, PyTorch)

- Quantified golf swing comparison with PGA Tour golfers by using Neural Networks and Computer Vision to detect 32 pose landmarks at 8 key moments of swing (address, backswing).
- Designed a custom ML algorithm to determine closest match by sequentially comparing analogous landmarks.

End-to-End Network Compression Detection (C, Wireshark)

- Implemented a high-performance client/server application utilizing UDP and TCP connections, sending 2 sets of packet trains with varying data entropy levels. Conducted packet capture analysis to compare transmission times and identify compression.
- Engineered a raw socket program that sends TCP and UDP packets to detect compression independently of server cooperation. Recorded and analyzed RST packet arrival times to determine network compression.

Differentiated Services and Network Simulation (C++, NS-3, Wireshark)

- Deployed 2 Quality of Service mechanisms, Strict Priority Queue and Deficit Round Robin on a network topology.
- Designed and simulated a 3-node network topology and used Wireshark for packet capture and analysis.
- Allowed the user to filter network traffic based on IP address, port number, mask, Protocol number.

Hotels.com Clone - Full Stack Website (Java, HTML, Ajax, JavaScript, MySQL, JDBC)

- Implemented the functionality of a hotel reviews website using Jetty servlets. Incorporated multithreading to concurrently serve requests to the server and load 1,000s of reviews to the MySQL database in seconds.
- Built the frontend with the Bootstrap framework. Dynamically loaded portions of the web page with Ajax and API calls, to reduce the resource cost and improved user experience.

TECHNICAL SKILLS

Programming Languages

Java, Python, C, C++, Go, JavaScript, TypeScript, HTML, R

Frameworks, Libraries and Tools

Scikit Learn, PyTorch, TensorFlow, Mediapipe, OpenCV, Docker, Git, GitHub, SQL, MySQL, Velocity, JDBC, Junit, Jetty, Agile Development, Google Cloud Run, Azure Container Instances, Express, Angular, React, jQuery, JSON, NS-3