

Jeffrey Guo

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EDUCATION

University of Southern California

Los Angeles, California

Masters of Science in Computer Science

January 2024 – Present

- GPA: 3.61/4.0
- Relevant Coursework: Natural Language Processing, Deep Learning, Data Structures and Algorithms, Database Systems, Information Retrieval and Web Search Engines

University of British Columbia

Vancouver, British Columbia

Bachelor of Science in Computer Science

Sep. 2018 – May 2023

- GPA: 3.7/4.0
- Relevant Coursework: Applied Industry Practices, Introduction to Software Engineering, Machine Learning and Data Mining, Intermediate Algorithm Design and Analysis, Computer Vision, Relational Databases

EXPERIENCE

Programming Instructor

Sep. 2021 – Apr. 2022, Oct. 2023 – July 2024

Sager Education

Vancouver, British Columbia

- Designed and taught curriculum in Python, Java, and full-stack web development (React, HTML/CSS/JS) to K-12 students.
- Authored interactive coding projects and technical presentations covering software design principles and programming fundamentals.
- Taught key CS concepts including Object-Oriented Programming, Data Structures, Algorithms, and basic version control using Git.

PROJECTS

Cloud-Native URL Shortener | AWS, Docker, PostgreSQL, Node.js, Express, React

September 2025

- Architected a serverless, multi-tier web application using AWS ECS Fargate and RDS, containerizing the React and Node.js services with Docker for scalable cloud deployment.
- Automated the entire software delivery lifecycle with a CI/CD pipeline using GitHub Actions, enabling zero-downtime deployments directly from every code commit.
- Implemented a secure network infrastructure using an Application Load Balancer, VPC, and distinct security groups to isolate services and manage traffic between the public internet, containers, and the database.

Video Keyframes to Summary Neural Network | Python, PyTorch

September 2024 – December 2024

- Designed an end-to-end pipeline that automatically generates video summaries by extracting keyframes, generating captions, and synthesizing them into a final summary.
- Fine-tuned a T5 model on video summary datasets to generate coherent text summaries from keyframe captions.
- Developed a novel LLM-as-a-judge evaluator using Google Gemini and benchmarked its performance against state-of-the-art metrics like BLEU, ROUGE, and BERTScore.

Multi-Agent Cooperative Training | C#, Python, Unity

September 2024 – December 2024

- Leveraged Unity ML-Agents MA-POCA learning algorithm and designed environment space for cooperative agents
- Modified reward structures to maximize evolution of agent cooperation.
- Trained agents for thousands of runs to develop agent behavior through Multi-Agent Reinforcement Learning.

Concert with Friends | React, Node.js, MongoDB, Mongoose, Express, Git

June 2021 – August 2021

- Collaborated in a 4-person team to build a full-stack React web application for users to form groups and attend concerts together.
- Engineered a RESTful API with Node.js and Express to connect components to a MongoDB database.
- Implemented Ticketmaster API features to filter and sort events near the user's location.

TECHNICAL SKILLS

Languages: Python, Java, C#, C/C++, JavaScript, Typescript, HTML/CSS, R, SQL

Frameworks/Libraries: PyTorch, Scikit, React, Node.js, Express, WordPress, Material-UI, pandas, NumPy, Matplotlib, react-bootstrap, Mongoose

Technologies: Git, VS Code, PowerBI, AWS, Docker, PostgreSQL, MongoDB, Firebase, PyCharm, IntelliJ, Eclipse