

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, Multimodal Probabilistic Learning of Human Communication, Data Structures and Algorithms, Database Systems

University of British Columbia

Vancouver, British Columbia

Bachelor of Science in Computer Science

Sep. 2018 – May 2023

- GPA: 3.7/4.0
- Relevant Coursework: Machine Learning and Data Mining, Intermediate Algorithm Design and Analysis, Introduction to Artificial Intelligence, Computer Vision

EXPERIENCE

Programming Instructor

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

Sager Education

Vancouver, British Columbia

- Designed and taught K-12 curriculum covering Python, Java, full-stack web development, and core CS concepts like OOP and Data Structures.
- Authored interactive coding projects and technical presentations covering software design principles and programming fundamentals.

PROJECTS

AI Video Content Repurposing Engine | *Python, React, Google Cloud Run, Docker* November 2025 – Present

- Architected a serverless full-stack platform transforming YouTube videos into structured, SEO-optimized blog posts using Gemini 2.0 Flash and Firebase.
- Engineered a low-latency backend pipeline on Cloud Run, utilizing stream-based audio extraction to process long-form content within 512MB RAM constraints.
- Implemented an OAuth2 authentication flow to securely authorize server-side media requests, successfully bypassing anti-bot IP blocking mechanisms.

Audio Visual Look-At-Me Model | *Python, PyTorch, Scikit*

January 2025 – April 2025

- Developed a multi-modal model which identifies whether each person is looking at the camera-wearer in an egocentric video.
- Processed and aligned audio-visual data from 150 videos, generating cropped-head datasets for model training.
- Trained "Conversational Attention" model using fusion of ResNet-encoded image and Whisper-encoded audio.

Video Keyframes to Summary Neural Network | *Python, PyTorch*

September 2024 – December 2024

- Designed a pipeline to automatically generate video summaries by extracting important keyframes, captioning them, then stitching them together.
- Experimented with multiple keyframe extractors such as Katna, Video-kf, and optical flow analysis to determine the best performer.
- Fine-tuned a T5 model on video summary datasets to generate coherent text summaries from keyframe captions.
- Developed an evaluator of LLM-as-a-judge using Google Gemini, while leveraging existing state-of-the-art evaluators such as 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.

TECHNICAL SKILLS

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

Frameworks/Libraries: PyTorch, Scikit, React, FastAPI, Vite, Node.js, Next.js, Express, pandas, NumPy, Matplotlib, react-bootstrap, Mongoose

Technologies: Git, PowerBI, AWS, Docker, PostgreSQL, MongoDB, Google Cloud Platform, Firebase, OAuth2