Jeffrey Hoang

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jeffrey-hoang-portfolio.vercel.app

Introduction

Hello there! I am a large language model, trained by Google [1]. I can help with a wide variety of tasks, from answering complex questions to generating creative text formats [1]. Just let me know what you need, and I will do my best to assist you.

Education

California State Polytechnic University, Pomona Aug 2022 - Current
Bachelor of Science in Computer Science GPA: 3.91/4.0

- **Expected Graduation Date**: Dec 2025
- **Relevant Coursework**: Machine Learning, Numerical Methods, Software Engineering, Design and Analysis of Algorithms, Database Systems
- **Awards**: Dean's List, President's List

Experience

Student Research Assistant Aug 2024 - Current
Computational Intelligence Lab | Department of Computer Science at Cal Poly Pomona
*Supervisor:**Dr. Hao Ji, Ph.D.**, Associate Professor*

- Developed web-based automation tools and REST APIs to control multi-camera GoPro setups using Python, OpenGoPro API, and USB/BLE/Wi-Fi protocols, increasing data collection efficiency.
- Trained deep neural networks for 3D keypoint detection on the Human3.6M dataset using TensorFlow on NVIDIA A100 GPUs across high-performance computing (HPC) clusters, incorporating batch normalization, ReLU activation, dropout, and linear layers to improve accuracy and generalization.
- Developed a physics-based pipeline fitting Metrabs 3D keypoint predictions to biomechanical Locomujoco models, applying forward kinematics and optimization to estimate joint angles and body scaling parameters for anatomically consistent and physically accurate 3D human pose alignments.

Lead Software Engineer – Project Sloka May 2025 - Current
Newtonianisotope | Pomona, CA
*Supervisor:**Dr. Fatemeh Jamshidi, Ph.D.**, Assistant Professor*

- Develop an adaptive learning and social-emotional learning platform for elementary school students.
- Built with Next.js, Supabase, Tailwind CSS, RESTful APIs, and the Gemini GPT API to deliver scalable AI-driven insights and interactive user experiences.
- Present Project Sloka to Cal Poly Pomona's Project Hatchery to secure faculty mentorship, acquire research funding, and build partnerships with local schools in Pomona and Chino Hills.

Machine Learning Research Intern – STARS Program Jun 2024 - Aug 2024
Computational Intelligence | Department of Computer Science at Cal Poly Pomona
*Supervisor:**Dr. Hao Ji, Associate Professor**, Ph.D.*

- Conducted research on multi-view geometry and markerless human pose estimation using multiple calibrated cameras, developing a pipeline based on existing research to automate

intrinsic/extrinsic camera calibration, multi-view video preprocessing, keypoint detection, and 3D pose reconstruction.
- Implemented an audio-based multi-camera synchronization system using Librosa, FFmpeg, and NumPy to align multi-view recordings for accurate reconstruction.
- Presented research at the Creative Activities and Research Symposium (CARS) at Cal Poly Pomona to peers and faculty.

Projects

Machine Learning – HTGR Project Aug 2023 – Dec 2023
Software Engineering Society | Cal Poly Pomona
- Directed a small team in developing a time-series classification pipeline for predicting sudden car movements using multi-axis accelerometer data.
- Implemented and optimized Support Vector Machine (SVM) models with a One-vs-Rest strategy in scikit-learn, achieving over 85% classification accuracy.
- Performed data preprocessing, feature scaling, and k-fold cross-validation to improve model generalization.

Skills

Technologies: Python, Java, SQL, Django, React.js, Next.js, TailwindCSS, Pytorch, Tensorflow, Scikit-learn, Numpy, Pandas, Matplotlib, Jupyter Notebook, Anaconda, Blender, Git, VSCode
Soft Skills: Problem Solving, Analytical Thinking, Collaboration, Time Management, Attention to Detail, Adaptibility