WEI JIANG

669 279 9260 • jiangwei0809@gmail.com • linkedin.com/in/weijiang08 • github.com/mr2wei • mr2wei.github.io

EDUCATION

University of Colorado Boulder — Boulder, CO
Bachelor of Science in Computer Science — *Expected May 2026*
Honors: Academic honors list — *GPA: 3.98*
Grants: Undergraduate Research Opportunities Program (UROP) Student Grants (Summer 2025; AY 2025–2026)

WORK EXPERIENCE — mr2wei.github.io/#experience

Autonomous Robotics and Perception Group (ARPG) — Boulder, CO
Research Assistant — *June 2025 – August 2025*

- Developed a novel robotic memory pipeline enabling autonomous robots to collect and store visual-textual memories with intelligent captioning, using custom classification models for advanced content filtering.
- Engineered an advanced retrieval-augmented reasoning pipeline that extends RAG with LLM-driven planning and multi-step semantic-spatial-temporal querying, enabling robots to efficiently locate objects and environments from past experiences.

Keysight Technologies — Bayan Lepas, Penang, Malaysia
RnD Software Engineering Intern — *June 2024 – August 2024*

- Developed an advanced chatbot from end-to-end with Azure, TypeScript, ReactJS and Flask to streamline the support ticket system on Jira, cutting response times from 3 days to just 30 seconds, improving user experience for issue reporting and enhancement requests.
- Engineered a Retrieval-Augmented Generation (RAG) and conversation system using a combination of chat and embedding models along with NLP techniques through LangChain and NLTK, enhancing quality of response and user interaction.
- Chatbot outperformed Confluence search, delivering more relevant and accurate results for natural language queries by 80%.

Collaborative AI and Robotics Lab (CAIRO), Human Interaction & Robotics Group (HIRO) — Boulder, CO
Research Assistant — *October 2023 – Current*

- Currently working with lab on better human intention prediction in assistive tech for wheelchair users using OpenCV and Graspnet for object and grasp recognition through depth camera data.
- Assisted in research of causal effects of robot movements on human actions during human-robot teaming by using object detection models such as FairMOT to identify humans and their behaviours around a moving robot.
- Contributed to research and co-authored a workshop paper on Causal Influence detection in Human-Robot Interactions for Causal-HRI 2024 (https://www.cairo-lab.com/papers/causalhri2024_workshop.pdf).

PROJECTS — mr2wei.github.io/#projects

Autonomous Grocery Shopping Robot | github.com/weiiitt/Grocery-Shopper — Spring 2025

- Developed a dual-stage computer vision pipeline combining YOLO object detection with FastSAM segmentation for precise object segmentation, enabling real-time object identification and 3D coordinate extraction from RGB-D camera streams.
- Built a manipulation system for 7-DOF TIAGo arm with inverse kinematics solver using ikpy, multi-waypoint trajectory planning, camera-to-robot coordinate transformations, and Cartesian space end-effector control for reliable pick-and-place operations.

Neural Network in Cuda from Scratch | github.com/mr2wei/cuda-nn-framework — December 2024 - Current

- Built a CUDA/C++ neural network framework with layers, activations, and propagation to understand NN algorithms.
- Gained hands-on experience with CUDA programming by writing custom kernels for forward/backward propagation, optimizers, and loss functions while exploring memory management, optimization, and parallelization in GPU environments.
- Future plans include adding support for Convolutional Layers and more to create Convolutional Neural Networks (CNNs) to enable image processing tasks.

AI PDF Summariser | github.com/mr2wei/AI-PDF-Summariser | mr2wei.github.io/AI-PDF-Summariser — Spring 2023

- Utilised LLMs to assist in reading, summarising and understanding PDF documents such as academic papers.
- Optimized notetaking during textbook reading, resulting in a time savings of over 2 hours weekly, while enhancing overall comprehension; gaining interest from 10+ individuals for further developments.
- Integrated OpenAI's API into a React JS application, enabling dynamic interactions and real-time response generation.

TECHNICAL SKILLS

Programming Languages: C++, Java, Python, JavaScript, HTML, CSS

Technical Skills: Adobe Photoshop, Adobe Lightroom, Git, Pandas, Matplotlib, Seaborn, Numpy, BS4, NLTK, React, TypeScript, postgreSQL, Git, CUDA, Linux

Relevant Courses: Advanced Data Science, Intro to Robotics, Data Structures, Algorithms, Intro to Data Science, Intro to AI, Software Development Methods, Operating Systems, Linear Algebra, Intro to Cybersecurity