

# Jessie Yuan

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## Education

**Carnegie Mellon University (CMU)** – Pittsburgh, PA

Aug. 2022 – Present

B.S. in Computer Science, Minor in Mathematics

- GPA: 4.0/4.0
- **Relevant Courses:** Machine Learning (10-701)\*, Embodied AI Safety (16-886)\*, Algorithm Design and Analysis (15-451), Computer Systems (15-213), Probability and Computing (15-259), AI Representation and Problem Solving (15-281)

## Research Experience

**Robotic Caregiving and Human Interaction Lab** – Robotics Institute, CMU

Feb. 2023 – Present

Undergraduate Researcher

- Co-led two projects under the mentorship of Prof. Zackory Erickson, including co-authoring a paper published at *UIST 2024* and delivering a live presentation and demonstration at the conference.
- Conducted in-depth literature reviews on LLM integration with robotics and wearable sensors for detecting eating behaviors to guide project frameworks and methodologies.
- Developed a ChatGPT-driven speech interface for a commercial feeding robot through prompt engineering, and designed a ROS-based system to collect, label, and process data from wearable sensors.
- Designed, organized, and conducted two human studies, including procedure documentation, participant interaction, and data analysis to collect training data and evaluate system efficacy and user experience.
- Processed, visualized, and cleaned data for machine learning; performed feature extraction and trained binary classification and regression models using PyTorch.

## Publications

A. Padmanabha\*, J. Yuan\*, J. Gupta, Z. Karachiwalla, C. Majidi, H. Admoni, and Z. Erickson, “VoicePilot: Harnessing LLMs as Speech Interfaces for Physically Assistive Robots”, in *The ACM Symposium on User Interface Software and Technology (UIST)*, 2024.

## Work Experience

**Sciligence** – Cambridge, MA

Jun. 2021 – Aug. 2022

Software Development Intern

- Contributed to both the frontend and backend development of a cutting-edge web-based lab notebook, utilizing HTML, CSS, JavaScript, C#, and SQL.
- Led a project to develop LCD digit recognition software using OpenCV in Python and presented the project to the entire development team, effectively communicating its goals and applications.

## Teaching Experience

Teaching Assistant for 21-128: Mathematical Concepts and Proofs, CMU

Fall 2024

Teaching Assistant for 15-251: Theoretical Computer Science, CMU

Spring 2024, Fall 2023

Teaching Assistant for 15-122: Imperative Computation, CMU

Spring 2023

## Projects

**Kaleido: Amplifying Films by Historically Underrepresented Directors**

Feb. 2024

CMU TartanHacks

- Developed a film recommendation web app for CMU’s largest hackathon, using OpenAI’s text embeddings to convert film summaries from marginalized directors into vector representations.
- Employed Facebook AI Similarity Search (FAISS) to efficiently and accurately search the vector database for films whose summaries were the most similar to films users already liked.