Jessie Yuan

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Education

Carnegie Mellon University (CMU) – *Pittsburgh, PA* Aug. 2022 – May 2026
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

Scilligence – *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.