Samuel Li

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Education

Carnegie Mellon University, *GPA: 4.0/4.0* *August 2025*
M.S. in Robotics | Funded Graduate R.A.
Courses: Intro to Robot Learning, Optimal Control and Reinforcement Learning, Interactive Robotics

University of Illinois Urbana-Champaign, *GPA: 3.88/4.0* *May 2023*
B.S. in Mathematics & Computer Science | Chancellor's Scholar, James Scholar, Undergrad Research Scholar
Courses: Machine Learning, Reinforcement Learning, Machine Perception, Algorithms, Hon. Real Analysis, Hon. Lin Alg

Publications

S. Li, S. Bhagat, J. Campbell, Y. Xie, W. Kim, K. Sycara, and S. Stepputtis, *ShapeGrasp: Zero-Shot Task-Oriented Grasping with Large Language Models through Geometric Decomposition*, IROS 2024 (In Review)

S. Bhagat, **S. Li**, J. Campbell, Y. Xie, K. Sycara, and S. Stepputtis, *Let Me Help You! Neuro-Symbolic Short-Context Action Anticipation*, RA-L 2024 (In Review)

A. Zhuo*, **S. Li***, P. Sriram*, X. Li*, J. Dong*, A. Sharma, Y. Zhong, S. Luo, V. Kindratenko, J. Heintz, C. Zallek, and Y. Wang, *YouTubePD: A Multimodal Benchmark for Parkinson's Disease Analysis*, Datasets and Benchmarks Track, NeurIPS 2023

S. Li, R. Sriver, and D. E. Miller, *Skillful Prediction of Seasonal Energy Consumption Based on Surface Climate Information*, Environmental Research Letters 2022

Research Experience

Foundation Models and Neuro-Symbolic Reasoning for Robot Manipulation
Research Assistant Supervised by ***Katia Sycara*** *Oct. 2023 – Present*
- Designed a zero-shot, vision-based task-oriented object grasping pipeline using LLMs for part affordance reasoning
- Developed a short-context action anticipation model and manipulation skill library for human-robot collaboration

Early Detection & Prediction of Parkinsonism Using Multi-Modal Few-Shot Learning
Undergraduate Researcher Supervised by ***Yuxiong Wang*** *Mar. 2022 – Sept. 2023*
- Employed SOTA few-shot/meta-learning techniques and attention to detect Parkinson's from visual/audio modalities
- Created the first public Parkinson's video dataset and validated generalizability to private medical datasets

Machine Learning and Statistical Methods for Energy Demand Prediction
Undergraduate Researcher Supervised by ***Ryan Sriver*** *Feb. 2020 – May 2023*
- Developed and tested statistical and machine learning methods for energy demand prediction on varying time scales

Work Experience

Capital One McLean, VA
Software Engineer Intern | Card Tech | TypeScript, Node.js, Playwright *Summer 2023*
- Developed a Playwright plugin to streamline and parallelize e2e automated testing, leading to team-wide migration

Software Engineer Intern | Enterprise, Data, Machine Learning | AWS, Snowflake, SQL, React *Summer 2022*
- Created and launched a production-grade dashboard facilitating important data-driven business decision-making

University of Illinois Department of Computer Science Urbana, IL
Course Assistant | Modeling and Learning in Data Science (CS 307) | NumPy, PyTorch *Fall 2022*
- Hosted office hours, created and graded labs, and helped Prof. design a new ML course as one of three course staff

Selected Project

Enhancing Sample Efficiency via Affordance-Based Exploration | *Intro to Robot Learning | PyTorch, ManiSkill2*
- Utilized affordance understanding in foundational models for efficient, safe, and aligned robot exploration and learning

Technical Skills

Python, C++, Java, MatLab, Julia, LaTeX, SQL, AWS, PyTorch, NumPy, TypeScript, React, Linux, ROS, Git, TypeChat