

Shengmiao (Samuel) Jin

 github.com/leumasnij  leumasnij.github.io  443-207-6601  leumasnij@cornell.edu

EDUCATION

Cornell University

Ph.D. Student in Robotics

- Minor in Computer Science

August 2025 - May 2030 (*expected*)

University of Illinois Urbana-Champaign

Bachelor of Science in Electrical Engineering with Highest Honors

- Minor in Computer Science

August 2021 - May 2025

GPA: 3.85/4.0

Minor GPA: 4.0/4.0

PUBLICATIONS

- [1] **Shengmiao Jin**, Yuchen Mo, and Wenzhen Yuan, “Learning to double guess: An active perception approach for estimating the center of mass of arbitrary objects,” *IEEE International Conference on Robotics and Automation (ICRA)*, 2025.
- [2] Zhi Wang*, Yuchen Mo*, **Shengmiao Jin**, and Wenzhen Yuan, “Doorbot: Closed-loop task planning and manipulation for door opening in the wild with haptic feedback,” *IEEE International Conference on Robotics and Automation (ICRA)*, 2025.
- [3] Harsh Gupta*, Yuchen Mo*, **Shengmiao Jin**, and Wenzhen Yuan, “Sensor-invariant tactile representation,” *International Conference on Learning Representations (ICLR)*, 2025.
- [4] Xinyuan Luo*, **Shengmiao Jin***, Hung-Jui Huang, and Wenzhen Yuan, “An intelligent robotic system for perceptive pancake batter stirring and precise pouring,” *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2024.

* Equal Contribution

RESEARCH EXPERIENCE

Cornell EmPRISE Lab + Praxis Lab

August 2025 - Present

Advisor: Prof. Tapomayukh Bhattacharjee and Prof. Preston Culbertson

- Working on Tactile Representation Learning for Dexterous Manipulation

UIUC RoboTouch Lab

September 2023 - May 2025

Advisor: Prof. Wenzhen Yuan

- Designed and implemented an algorithm that decomposes an arbitrary image into a robot trajectory. Experimented and designed an algorithm for the robot to be able to handle liquid in an even manner. Integrated the overall pipeline presented and co-first-authored a paper published in IROS 24. [4]
- Led a project on estimating the mean and uncertainty of the center of mass for any arbitrary object with Active Perception. Submitted a first-author paper to ICRA 25. [1]
- Designed a learning approach to get sensor-invariant tactile image representations with calibration images and a sim2real pipeline. Compared and outperformed some baseline SOTA on several downstream tasks. [3]
- Investigating high-resolution tactile representation for dexterous in-hand object re-position. Training the policy on IsaacGym with a teacher-student network, and zero-shot transferring to the real LEAP hand.

WORK EXPERIENCE

BGI Shenzhen - Institute of Biointelligence | Intern - Algorithmic Engineer

December 2022 – June 2023

- Implemented a tool to help Biomedical Researchers to perform automatic Image Registration. Was later integrated into Cellbin, a BGI product that empowered research in Stereo-Seq
- Developed an automatic chip analysis tool to facilitate the production of biomedical chips.
- Integrated company’s own Segmentation model on a server app via MONAI-based tool for easy access by biomedical researchers
- Tested performance of different segmentation models, helped fine-tune company’s segmentation models

TEACHING EXPERIENCE

Cornell | Graduate Teaching Assistant

- CS 5757 - Optimization Methods for Robotics Spring 2026
- CS 4750/5750 - Foundations of Robotics Fall 2025

UIUC | Undergraduate Grader

- ECE 311 - Digital Signal Processing Lab Spring 2024
- ECE 210 - Analog Signal Processing Fall 2023

OTHER PROJECTS AND ACTIVITIES

Phantom Navigation | ECE 598 CS Final Project

Spring 2025

- Implemented a Phantom Touch-based navigation grove with haptic, prototyped the hardware and design the algorithm for navigation.

Robot Drawing | ECE 470 Final Project

Fall 2024

- Implemented a Minimum Spanning Tree plus Edge Detection algorithm to decompose any drawing into a robot trajectory so that we can use the robot to draw an arbitrary input image.

End-to-End Autonomous Vehicle Driving with Imitation Learning | ECE 484 Final Project

Spring 2024

- Implemented and trained Imitation Learning algorithm with data collected on our own at Highbay-IRL. Tested the algorithm on the GEM vehicle. The final video can be found on Youtube.

Artwork Style Classification and Tranfer | CS 445 Final Project

Fall 2023

- Implemented and trained an EfficientNetV2-based classification model, a VGG-based Neural Style transfer, and a CycleGAN-based style generator.

Reaction Wheel Pendulum | ECE 486 Final Project

Fall 2023

- Implemented a 3-state PD controller with Decoupled Observer and friction compensation that can allow a pendulum to reject disturbance and stay at an unstable equilibrium position with only a rotor

Tetris On FPGA | ECE 385 Final Project

Summer 2023

- Implemented the classic game Tetris on an Intel MAX10 FPGA, programmed using SystemVerilog for hardware level and C for software level.

Computer Vision Team Member | Illini Robomaster

Fall 2022

- Part of Illini Robomaster CV Team that implemented object detection and tracking algorithm for competition

BitCorn | ECE 220 Honors Project

Spring 2022

- Implemented a Bitcoin Price prediction model using LSTM and updated daily results on a website

SKILLS

Spoken Languages: English, Chinese(Bilingual)

Programming Languages: Python, C/C++, LATEX, Matlab, SystemVerilog

Software Package: ROS, PyTorch, OpenCV, PyRo, IssacSDK, TensorFlow, RealSense SDK

HONORS AND AWARDS

Best Entertainment and Amusement Papers Finalists

IROS 24

James Scholar

Spring 2022 - Spring 2024

Dean's List

Fall 2021, Spring 2022, Fall 2023, Spring 2024

Valedictorian, West Nottingham Academy Class of 2021

May 2021