Shengmiao (Samuel) Jin

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Education

University of Illinois Urbana-Champaign May 2025 *expected*
Bachelor of Science in Electrical Engineering *GPA: 3.93/4.0*
- Minor in Computer Science

West Nottingham Academy May 2021
High School Diploma *GPA: 4.18/4.33*
- Graduated as Valedictorian

Skills

Speaking Languages: English, Chinese(Bilingual)
Programming Languages: Python, ROS, C/C++, LaTeX, R, Matlab, SystemVerilog
Libraries: TensorFlow, PyTorch, Scikit-Learn, OpenCV, Keras
Relevant courses: Intro to Robotics, Signal Processing, Computational Photography, Control Systems, Deep Learning for CV, Principle of Safe Autonomy, Artificial Intelligence

Work Experience

UIUC ECE | *Undegraduate Grader for ECE 210 & ECE 311* August 2023 – Present
- Graded weekly homework assignments and handle all regrade requests for Undergraduate Course Analog Signal Programming
- Helped revise the solution manual and grading manual of several homework assignments.

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
- 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
- Developed an automatic chip analysis tool to facilitate the production of biomedical chips.

Research Experience

UIUC RoboTouch Lab | *advisor: Prof. Wenzhen Yuan* September 2023 - present
- 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.

Tufts Higher Energy Physics Lab | *advisor: Prof. Pierre-Hugo Beauchemin* June 2020 – August 2020
- Implemented an Unfolding Algorithm to clean up data from CERN's Large Hadron Collider using Deep Learning algorithms.
- Examined the performance of different Deep Learning algorithms on the specific dataset and how they improve the data quality
- Presented findings in the form of an academic poster at Tufts Summer Research Experience Symposium

Honors and Awards

James Scholar Spring 2022 - Present
Dean's List 2021-2022, Fall 2023

Publications

[1] Xinyuan Luo*, **Shengmiao Jin***, Hung-Jui Huang, and Wenzhen Yuan. An intelligent robotic system for perceptive pancake batter stirring and precise pouring. *In Submission*, 2024.

Other Projects and Activities

Artwork Style Classification and Tranfer | CS445 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 a 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 Fall 2022

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