ERIC JI

GitHub ◇ Homepage ◇ LinkedIn

PERSONAL INFORMATION

Citizenship: U.S. Citizen, **Phone:** +1 (518) 265-5649, **Email:** ericji3@illinois.edu

EDUCATION

University of Illinois Urbana-Champaign — August 2024 - Present
Ph.D. in Electrical and Computer Engineering advised by Dr. Minh N. Do — GPA: 3.87/4.0

University of Illinois Urbana-Champaign — August 2020 - May 2024
B.S. in Computer Engineering with Highest Honors — GPA: 3.91/4.0

Relevant Courses: Computer Vision, Deep Learning for Computer Vision, Computational Photography, Digital Signal Processing, Machine Learning, Data Science and Engineering, Random Processes

PUBLICATIONS

E. Ji, B. Dong, B. Samanthula, N. Zhou, *"2D-FACT: Dual-Domain Fake Image Detection Against Text-to-Image Generative Models"* - MIT Undergraduate Research Technology Conference (URTC 2023).

S. K. Kamtikar, **E. Ji**, N. K. Uppalapati, G. Krishnan, G. Chowdhary. *"Realistic Simulation Environments to Achieve Visual Servoing on Soft Continuum Arms in Constrained Environments"* - Fourth International Workshop on Machine Learning for Cyber-Agricultural Systems (MLCAS 2022).

RESEARCH EXPERIENCE

Computational Imaging Group — August 2024 - Present
Advised by Dr. Minh N. Do and in collaboration with Dr. Yaoyao Liu
· Developing a cross-modal image feature matcher that produces correspondences between drawings and real images
· Collaborating with industry leaders to design a vision-based inspection system for electronics manufacturing
· Improving 3D pose control of objects generated by diffusion models to aid in synthetic data generation

Vision Group — August 2023 - May 2024
Advised by Dr. Svetlana Lazebnik
· Developed a detector capable of identifying the source of images generated by various GANs and diffusion models
· Evaluated the performance implications of different strategies for integrating Fourier transform signals

NSF Research Experiences for Undergraduates — June 2023 - August 2023
Advised by Dr. Boxiang Dong
· Built several CNNs relying on different features capable of accurately and efficiently detecting synthetic images
· Compiled a comprehensive real/synthetic dataset containing 25,000 contextually aligned image pairs

Distributed Autonomous Systems Laboratory — May 2022 - August 2023
Advised by Dr. Girish Chowdhary
· Fine-tuned an object detection algorithm (YOLO) to detect Japanese Beetles for mobile field robots
· Built digital twins of environments with Blender to assist in developing path planning algorithms for visual servoing

WORK EXPERIENCE

Siemens Digital Industries Software — May 2025 - August 2025
Strategic Student Intern at GenX R&D Seattle Team
· Enhanced a multi-modal foundation model designed for industrial use by performing inference time optimizations
· Implemented a diffusion model-based synthetic data pipeline to generate CAD images with realistic textures

TEACHING

Teaching Assistant - ECE 484: Principles of Safe Autonomy

TECHNICAL SKILLS

Languages	C, C++, Java, Python, SystemVerilog
Tools	Blender, Git, Numpy, OpenCV, Pandas, PyTorch, Scikit-Learn