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

TEACHING AND LEADERSHIP

Graduate Teaching Assistant
ECE 484: Principles of Safe Autonomy

IEEE-Eta Kappa Nu
Host tutoring sessions, mentor students on their academic goals, and plan educational activities for local community

Illini Bass Fishing Club Treasurer
Organized collegiate tournaments and held recreational events for a community of 100+ student anglers

TECHNICAL SKILLS

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