JIN HUANG

Applied Researcher, Generative AI

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EDUCATION

Ph.D., Computer Science and Engineering (Advisor: Walter J. Scheirer)
University of Notre Dame. Notre Dame, IN, USA. Aug 2019 – Jun 2025

Master of Science, Computer Science
New York University. New York, NY, USA. Sep 2016 – May 2018.

Bachelor of Engineering, Software Engineering
Nankai University. Tianjin, China. Sep 2012 – Jun 2016.

RESEARCH INTERESTS & SKILLS

Computer Vision, Generative AI, Image and Video Generation and Editing
Video Understanding, Reinforcement Learning, Model Efficiency and Acceleration

WORK AND RESEARCH EXPERIENCES

Applied Researcher, Generative AI
Meitu Inc. – Pixocial Technology (Subsidiary), MT-Lab R&D Department. Bellevue, WA, USA. Jun 2025 – Now

- Driving research and development of state-of-the-art diffusion and transformer-based models for **image and video generation and editing**, with emphasis on consistency, controllability and continuity.
- Mentored interns on research topics such as **image editing, video understanding, model evaluation and reinforcement learning**, guiding experimental design and manuscript writing and published in top-tier venues.
- Leading an applied research initiative on controllable image editing:
  - **Research Impact:** Leading model research and experimentation for controllable image editing, spanning model and algorithm design, training strategies, data curation, and systematic evaluation.
  - **Product and Engineering Impact:** Architected **large-scale data, training and inference infrastructure**, covering automated data pipelines, LoRA-based fine-tuning, training optimization, and inference acceleration; driving the transition from research prototype toward product deployment.
- Collaborated with cross-functional teams of researchers, designers, product managers and engineers to translate research prototypes into practical systems for generative media features used by millions of users around the world.

Deep Learning Intern
W. W. Grainger, Grainger Technology Group (GTG). Lake Forest, IL, USA. Jun 2024 – Aug 2024

- Constructed pipeline for data cleaning and analysis on over 100 categories of Grainger industrial data.
- Improved retrieval accuracy and recall by fine-tuning Multi-Modal Foundational Models and Large Language Models and utilizing extracted multi-modal features.

Computer Vision Research Intern
Dolby Laboratories, Advanced Technology Group (ATG). Sunnyvale, CA, USA. Jun 2023 – Sep 2023

- Completed data collection and analysis on human gaze data for real and AI-Generated face recognition. First author accepted to Automatic Face and Gesture Recognition (FG) 2025 as an oral presentation.
- Explored human perception inspired method for improving StylGAN-3 for better image generation.
- Contributed to filed patent "Enhancement of Generative Image Models Based on Gaze."

Computer Vision R&D Engineer Intern

Kitware Inc, Computer Vision Team. Clifton Park, NY, USA. May 2021 - Aug 2021.

- Imporved data pipeline, model training and testing on Human Activity Recognition (HAR) and Open-World Learning (OWL).
- Explored Contrastive Learning, Representation Learning and Self-Supervised Learning for HAR.
- Collaborated paper accepted to Journal of Artificial Intelligence (JAIR).

Graduate Research Assistant

Notre Dame Computer Vision Research Lab (CVRL). Notre Dame, IN, USA. Jan 2020 – Jun 2025

- Extreme Value Theory based method for modeling category decision boundaries in visual recognition.
- Multi-Objective optimization on novel grass segmentation and ecological monitoring.
- Formalization and benchmarking on human activity recognition in an Open World.
- Human perception guided and deep learning based method for Open-Set Recognition.

Computer Vision Research Engineer

Singularity.AI. Bellevue, WA, USA. Jun 2018 – May 2019

- Deep learning based forzen section tumor segmentation and classification.
- Multi-Modal representation learning and image enhancement on CT/MRI/etc.

Graduate Research Assistant

NYU Multi Medial and Visual Computing Lab (MMVC). New York, NY, USA. Mar 2017 – May 2018

- Deep Learning based text localization and recognition in complex nature scenes.
- Pendestrian re-identification and classification.
- Multi-organ segmentation in CT and MRI images with deep adversarial networks (Master thesis).

SELECTED PUBLICATIONS

- **Jin Huang**, Arun, D., & Scheirer, W. (2025). Extreme value theory for modeling category decision boundaries in visual recognition. biorxiv: Https://www.biorxiv.org/content/10.1101/2025.09.08.673121v1.
- Abraham, S., **Jin Huang**, RichardWebster, B., Milford, M., & Scheirer., W. (2024). Enhancing ecological monitoring with multi-objective optimization: A novel dataset and methodology for segmentation algorithms. arxiv: 2408.06356.
- **Jin Huang**, Gopalakrishnan, S., Mittal, T., Zuena, J., & Pytlarz, J. (2024). *A human eye tracking study on real and fake face recognition based on generative models.* International Conference on Automatic Face and Gesture Recognition (FG 2025).
- Gopalakrishnan, S., Mittal, T., **Jin Huang**, Zuena, J., & Pytlarz, J. (2024). *Enhancement of generative image models based on gaze.* US Patent No. 63/553,406. Filed by Dolby Laboratories in Feb 2024.
- Prijatelj, D., Grieggs, S., **Huang, Jin**, & Scheirer, W. (2024). *Human activity recognition in an open world.* Journal of Artificial Intelligence Research (JAIR) 81 (2024) 85-122. Arxiv: https://arxiv.org/abs/2212.12141.
- **Jin Huang**, Prijatelj, D., Duley, J., & Scheirer, W. (2023). *Measuring human perception to improve open-set recognition.* IEEE Transaction on Pattern Analysis and Machine Intelligence (T-PAMI). https://arxiv.org/abs/2209.03519.

MISCELLANEOUS

- Reviewer: T-IFS, T-PAMI, CVIU, CVPR, ECCV, ICCV, WACV, FG, BMVC.
- Conference talk: “Extreme Value Theory for Modeling Category Decision Boundaries in Visual Recognition.” Vision Science Soceity (VSS) Annual Meeting, May 2025, Florida.
- Invited talk: "Measuring Human Perception to Improve Open Set Recognition." 2nd MSU-ND Computer Vision and Biometrics Workshop, May 2023, Michigan State University.
- Best Presentation Award for Doctoral Consortium: "Visual Psychophysics for Open-Set Recognition”. Tapia Conference, September 2022, Washington DC
- National Science Foundation (NSF) Scholarship, Tapia Conference 2022
- Japan Student Services Organization (JASSO) scholarship, Apr 2014 - Mar 2015