JIUHONG XIAO

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EDUCATION

New York University Sep 2022 - Dec 2026 (Expected)
Ph.D. in Electrical and Computer Engineering; Visiting Student Researcher, EECS UC Berkeley

New York University Jan 2020 - Dec 2021
M.S. in Computer Science

University of Science and Technology Beijing Aug 2015 - Jun 2019
B.Eng. in Intelligence Science and Technology

EXPERIENCE

New York University Sep 2022 - Present
Ph.D. Student Researcher
• Developed a **UAV thermal geo-localization** system by aligning **multi-modal data** (thermal imagery and satellite maps) to enable reliable nighttime navigation, achieving 20 m positional accuracy at 500 m altitude.
• Developed a **self-supervised learning** benchmark for **ground-view visual geo-localization** and proposed novel feature aggregation methods for **multi-dataset joint training**, enhancing generalization across diverse conditions.
• Designed a **flow-matching-based RGB-to-thermal** generative model with style-disentangled representation learning to improve generalization across viewpoint, illumination, sensor, and domain variations.

Amazon
Applied Scientist Intern Jul 2025 - Oct 2025
• Developed a unified **Vision-Language Model (VLM)** framework for **shelf analytics**, including out-of-stock (OOS) prediction, product recognition, and shelf/rack identification.
• Achieved 95% precision and recall for OOS prediction, significantly outperforming SAM 2.1, YOLOv11, and CLIP-based baselines and improving operational efficiency in grocery environments.

Applied Scientist Jan 2022 - Aug 2022
• Designed and deployed a **multi-view occlusion detection** system to automatically identify and mitigate unknown occluders (e.g., equipment, signage), improving system robustness.
• Collaborated with software engineering and store operations teams to integrate real-time occlusion alerts, reducing store downtime and lowering manual monitoring overhead across **20+ Amazon Go locations**.

Applied Scientist Intern May 2021 - Aug 2021
• Developed a **VAE-based face-image compression** method and jointly optimized the compression and recognition models, reducing file size to 27.4% of HEVC while lowering the FRR at an industry-standard FAR.
• Co-inventor on U.S. Patent *System to Determine Compact Representation of Data* (US12380738B1), granted 2025.

SELECTED PUBLICATIONS

ThermalGen: Style-Disentangled Flow-Based Generative Models for RGB-to-Thermal Image Translation.
Jiuhong Xiao, Roshan Nayak, Ning Zhang, Daniel Tortei, Giuseppe Loianno. *NeurIPS 2025.*

UASTHN: Uncertainty-Aware Deep Homography Estimation for UAV Satellite-Thermal Geo-localization.
Jiuhong Xiao, Giuseppe Loianno. *ICRA 2025.*

VG-SSL: Benchmarking Self-supervised Representation Learning Approaches for Visual Geo-localization.
Jiuhong Xiao, Gao Zhu, Giuseppe Loianno. *WACV 2025.*

STHN: Deep Homography Estimation for UAV Thermal Geo-localization with Satellite Imagery.
Jiuhong Xiao, Ning Zhang*, Daniel Tortei*, Giuseppe Loianno. *IEEE RA-L 2024.*

Long-range UAV Thermal Geo-localization with Satellite Imagery.
Jiuhong Xiao, Daniel Tortei, Eloy Roura, Giuseppe Loianno. *IROS 2023.*

Identity Preserving Loss for Learnt Image Compression.
Jiuhong Xiao, Lavisha Aggarwal, Prithviraj Banerjee, Manoj Aggarwal, Gerard Medioni. *CVPRW 2022.*

Multi-Robot Collaborative Perception with Graph Neural Networks
Yang Zhou, Jiuhong Xiao, Yue Zhou, Giuseppe Loianno. *IEEE RA-L 2025.*

(Visit `https://xjh19971.github.io/` for a full publication list. *Equal Contribution.)

AWARDS AND HONORS

NeurIPS 2025 Scholar Award (Travel Grant)	2025
ICRA 2025 Thermal Infrared in Robotics Workshop Best Poster Award Finalist	2025
ICRA 2025 RAS Travel Grant	2025
Dr. Li Annual ECE Publication Award, NYU	2025
Ernst Weber Fellowship, NYU	2023
School of Engineering Fellowship, NYU	2022

SKILLS

Programming:	Python (advanced), C/C++.
Machine/Deep Learning:	PyTorch (Lightning), HuggingFace.
Computer Vision:	OpenCV, Kornia.
DevOps & HPC:	Docker, Singularity, Slurm.