Yifan Luo

+1 (217) 904-2915 | yifan65@illinois.edu | linkedin.com/in/luo-yifan | github.com/im-yifanluo

Education

University of Illinois Urbana–Champaign GPA: 4.00/4.00

B.S. in Computer Science | Dean's List | James Scholar Honors Program *Expected May 2028*

Completed: Data Structures (Honors), Discrete Structures, Probability & Statistics for CS, Calculus III, Applied Linear Algebra
Enrolled In: Algorithms and Models of Computation, Machine Perception, Computer Architecture

Experience

Co-Founder & Technical Lead Sept. 2025 – Present

Framelight (framelight.ai)

- Led a 15-person team building Framelight, an iOS/Android camera app providing real-time, on-device computer vision guidance; launched on both platforms and grew the waitlist to 200+ users
- Architected a real-time React Native camera pipeline with Expo, VisionCamera, ML Kit, and OpenCV, translating subject-aware crop rankings into directional guidance, automatic zoom, and optional auto-capture
- Trained and deployed MobileNetV2 TensorFlow Lite model for real-time on-device aesthetic composition scoring
- Built Skia post-capture pipeline analyzing images and ranking 60 calibrated LUTs by fit and diversity

Undergraduate Researcher, RoboTouch Lab Jan. 2026 – Present

University of Illinois Urbana–Champaign (Prof. Wenzhen Yuan; Mentor: Jingyi Xiang)

- Developed simulation and real-world pipelines for visuomotor imitation learning, including Isaac Sim teleoperation and UMI-based collection using a 3D-printed gripper, GoPro, SLAM, IMU, and AprilTag trajectory extraction
- Collected 500+ human demonstrations and trained, evaluated, and deployed Diffusion Policies on a UR5 robot arm; resolved gripper normalization, action timing, downsampling, and inference latency issues
- Implemented CLIP-style contrastive pretraining for visual and tactile encoders and integrated into Diffusion Policy
- Built a real-time ROS 2 object-rendering pipeline integrating RealSense, AprilTags, PyBullet, and OpenCV to overlay target object placement during demos and benchmarking

Research Assistant, FORWARD Data Lab Dec. 2025 – Aug. 2026

University of Illinois Urbana-Champaign (Prof. Kevin Chang)

- Developed an evidence-role context-assembly prototype for long-document RAG that selects, expands, deduplicates, and orders retrieved chunks into coherent, evidence-complete prompts under fixed token budgets
- Implemented and evaluated 10+ RAG methods, including RAPTOR, DOS-RAG, ReadAgent, SetR, CRAG, RECOMP, and MacRAG, under controlled retrieval, reader, and token-budget settings
- Built SCROLLS and Qwen based QA pipelines to diagnose retrieval, ordering, redundancy, token-budget failures

Cryptography Researcher, Pioneer Scholars Program July 2024 – Sept. 2024

Pioneer Academics (Prof. Suleyman Uludag)

- Evaluated performance trade-offs for 9 NIST post-quantum cryptography KEMs and digital signatures
- Designed automated testing and benchmarking pipelines to produce comprehensive runtime and memory profiling
- Authored a 45-page thesis to recommend 4 algorithms for real-world adoption with optimization recommendations

Projects

PhotoGleam (*Flutter, Python, Flask, OpenCV, TensorFlow, Git*) Apr. 2024 – Aug. 2024

- Shipped a cross-platform mobile app that enhances image quality utilizing AI-curated filters
- Developed a full-stack solution with Flutter, Flask REST API, AWS infrastructure, and custom AI filter engine
- Launched on Apple App Store and Google Play Store; patent filed; IgniteCS Programming Expo 2024 1st Place

Awards

Canadian Math Contest Distinctions: Euclid, CSMC, CIMC, COMC; Rodger Allan Mathematics Award; Jump Trading Probability Cup Top 1%; Governor General's Bronze Academic Medal; URSA Best Research Poster Award

Technical Skills

Languages: C++, Python, Java, TypeScript, JavaScript, Rust, Dart
Frameworks & Tools: React Native, Expo, Flutter, Flask, AWS, Docker, Git, Linux
AI/ML & Computer Vision: PyTorch, TensorFlow, LiteRT, NumPy, OpenCV, RAG, Information Retrieval
Robotics: ROS 2, Isaac Sim, UMI, RealSense, AprilTags, Diffusion Policy, SLAM