Simon Yu

Urbana, IL | simonyu@simonyu.net | (217)-979-6645 | simonyu.net | linkedin.com/in/thesimonyu

Education

Doctor of Philosophy in Electrical and Computer Engineering May 2026
- University of Illinois Urbana-Champaign, GPA: 3.97 / 4.00

Master of Science in Electrical and Computer Engineering May 2025
- University of Illinois Urbana-Champaign, GPA: 3.97 / 4.00

Skills

Programming Languages: C/C++, Python, Bash, LaTeX, Java, MATLAB, JavaScript, HTML, CSS
Development Frameworks: Git, CMake, Qt, FreeRTOS, PyTorch, KiCad, FreeCAD, Apollo/CyberRT, ROS
Hardware Platforms: ESP32, Arduino, Raspberry Pi, NVIDIA Jetson TX1/TX2/Xavier/Orin

Experience

System Software Engineer, NVIDIA Sep 2026 - Present
- Developed GPU system software firmware components, optimizing power management and system performance
- Resolved complex technical issues independently across multiple hardware and software teams and domains

Co-Founder, Multiped LLC May 2023 - Present
- Showcased new prototype controlling Quanser helicopter chassis live in 2025 NASA ULI on-site demo event
- Authored documentation and conference publications detailing system design and experimental results [2]

Graduate Research Assistant, Cyber-Physical Systems Integration Lab (CPSIL) Aug 2019 - May 2026
- Conducted research on safe autonomous systems, focusing on embedded platforms and robust perception
- Contributed to talks and grant proposals, authored and reviewed conference and journal publications [1 – 3]

Select Research Projects

Neural Probabilistic Circuit (NPC) for Robust and Interpretable Perception Nov 2022 - Aug 2026
- Developed PyTorch attribute recognition and probabilistic circuit (PC) models with LearnSPN Java integration
- Built PyQt labeling and interpretation GUIs and trained 200+ models on four datasets with results published [1]

Biped Embedded Hardware-Software Platform for Robotics and Autonomy Dec 2021 - Jun 2026
- Co-designed in KiCad and assembled self-balancing robotic platform and deployed 15+ units in CS 431 course
- Developed C++/FreeRTOS embedded firmware and Qt desktop ground station GUI with results published [2]

Unmanned Aerial Vehicle (UAV) Geofencing Trajectory Estimation Jun 2018 - Jan 2020
- Developed models and algorithms for trajectory estimation and evasive maneuvers under realistic constraints
- Implemented in C/C++ within uavAP autopilot, with published results [3] validated in X-Plane and real flights

Select Publications

[1] Neural Probabilistic Circuits: Enabling Compositional and Interpretable Predictions Aug 2026
Simon Yu*, Weixin Chen*, Huajie Shao, Lui Sha, Han Zhao (**Co-first authors with equal contributions*)
Springer Nature Machine Learning Journal (MLJ)

[2] Biped: A Unified Embedded Hardware-Software Platform for Urban Air Mobility Jun 2026
Simon Yu, Steven Zhu, Lui Sha, Or D. Dantsker
American Institute of Aeronautics and Astronautics (AIAA) Aviation Forum

[3] Trajectory Estimation for Geo-Fencing Applications on Small-Size Fixed-Wing UAVs Jan 2020
Simon Yu*, Mirco Theile*, Or D. Dantsker, Marco Caccamo (**Co-first authors with equal contributions*)
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)

In the Name of God