Qixuan (Keeron) Huang

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TECHNICAL SKILLS

Programming: Assembly (LC3, RISC-V), C/C++, Python, SQL (MySQL)

Systems: Docker, Linux Kernel, QEMU, Unix

Development Tools: Bash Scripts, GDB, Git, LaTeX, Makefile, Markdown

AI & Robotics: Blender, CUDA, PyTorch, ROS

RESEARCH

CVNext Lab — Haining, CN
Advisor: *Gaoang Wang* — Jun. 2023 - Present

- Engineered a redesigned automation algorithm to extract pixel-level height data using Blender OSM integration, enhancing geospatial accuracy.
- Spearheaded the development of the CityCraft-OSM and CityCraft-OSM-Satellite datasets for urban-scale simulations and machine learning applications.
- Collaborated on integrating large language models with geospatial pipelines via GeoChat, optimizing spatial reasoning and computation workflows.
- Led an ECCV workshop on autonomous driving perception, achieving a top 10 global ranking and fostering cross-disciplinary collaboration.

Ultrafast Photonics Laboratory — Hangzhou, CN
Advisor: *Chaoyuan Jin* — Jun. 2023 - Sep. 2023

- Improved classic Boids algorithms by integrating principles of quantum dynamics, boosting algorithmic efficiency by 20% in foraging and hunting simulations.
- Advanced theoretical frameworks by implementing mathematical models to enable real-time visualization of quantum dynamic behaviors.
- Built dynamic visualization tools in MATLAB and Python to model quantum theory, enabling real-time insights and interactive data presentations.

PROJECTS

CityCraft: A Real Crafter for 3D City Generation — Jan. 2024 - May. 2024

- Built a framework for infinite, diverse 3D city layout generation using an outpainting pipeline and multi-scale diffusion model, achieving state-of-the-art results.
- Tools Used: Python(Pytorch, Numpy), Blender, UE5

Citygen: Infinite and Controllable 3D City Layout Generation — Jun. 2023 - Nov. 2023

- Generated diverse and realistic 3D city scenes using a diffusion transformer for layouts, a large language model for planning, and Blender for asset placement, achieving state-of-the-art results.
- Tools Used: Python(Pytorch, Numpy), Blender

UniCareers: A platform linking academic courses to career pathways — Sep. 2024 - Dec. 2024

- Empowered college students to explore academic and career pathways by linking coursework to occupations through SOC-based visualizations and course-to-job matching.
- Tools Used: Python, SQL

Quantum Algorithms Based on Robot Swarms — Jun. 2023 - Sep. 2023

- Enhanced the Boids algorithm by integrating quantum dynamics, improving efficiency by 20%, and developed real-time visualization models using MATLAB and Python.
- Tools Used: Python(Numpy)

EDUCATION

University of Illinois Urbana-Champaign Aug. 2022 – Jun. 2026(Expected)

- B.S. in Computer Engineering
- **Coursework:** Operating Systems, Applied Parallel Programming, Probability with Engrg Applic, Principle of Safe Autonomy, Natural Language Processing

Zhejiang University, Aug. 2022 – Jun. 2026(Expected)

- B.S. in Electrical and Computer Engineering, Micro-minor in Intelligent Engineering (Expected)

AWARDS AND DISTINCTIONS

Zhejiang University Scholarship - Second Prize **2022**
Zhejiang University Scholarship - Third Prize **2023**

TEACHING

RHET 102 Principle of Research, UIUC **S24**
Under: Mary Hays
ECE 330 Power Circuits and Electromechanics, UIUC **S25**