Yuxuan Lin

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EDUCATION

ZJU-UIUC Institute, Zhejiang University (ZJU) **Haining, China**
B.Eng. in Computer Engineering (ZJU) & B.S. in Computer Engineering (UIUC) Aug. 2021 - May 2025
University of Illinois Urbana-Champaign (UIUC) **Urbana, IL**
Exchange Year at Grainger Engineering Aug. 2023 - May 2024
Relevant coursework: Artificial Intelligence, Communication Networks, Computer Systems Engineering, Database Systems, Game Development

PROFESSIONAL EXPERIENCE

Hikvision Digital Technology Co., Ltd. **Hangzhou, China**
Embedded Software Development Intern | IoT Product Group 5 July 2024 - Sept. 2024

- Developed control system modules for commercial cleaning robots on FreeRTOS and Linux OS.
- Designed and implemented sensor logic for GD32 microcontroller using the Keil environment, compiling and flashing the code to ensure precise control and real-time operation.
- Contributed to 80% reduction in human labor reduction by delivering the sensor logic for floor-cleaning functionality, which led to anticipated 20% revenue increase.

RESEARCH EXPERIENCE

Generative AI Based 3D Models Generation **Hangzhou, China**
Advisor: Liuqing Chen (ZJU D3 Lab) June 2024 - Nov. 2024

- Developed a Blender plugin in Python and its panel, including core functionalities such as model import and export, recommendation system, model management, window segmentation, and seamless switching between Gaussian/Mesh models.
- Generated Gaussian bulbs model and rendered mesh model on web servers using Transformer-based algorithms, which enabled text description based generation.
- Implemented Flask framework for web backend monitoring for user interactions.

GPU-Accelerated Computation for Electromagnetic Scattering of a Vegetation Model **Haining, China**
Advisor: Shurun Tan (ZJU Summer Research) June 2023 - July 2023

- Designed a highly parallel GPU-based algorithm for Monte Carlo electromagnetic scattering simulations of a double-layer vegetation model.
- Utilized MATLAB on Linux for phase matrix calculations; optimized performance using asynchronous data transfer. Achieved a significant 93x speed-up compared to a pure-CPU serial approach.

SELECTED PROJECTS

LOS - A Light Linux-Like Operating System Spring 2024

- Developed a Linux-like kernel from scratch using C and x86 assembly language.
- Supported preemptions, system calls, and exceptions managed by 8259 PIC; Implemented kernel and user modes switching, using TSS - task state segment to support IRET.
- Completed the virtual memory (using page directory & table), file system (two-layer mapping), terminals for display and so on; Currently supported devices include keyboards, RTC, and PIT interrupts.
- Completed multi-process scheduling with scheduler and multi-terminal switching (buffer, cursor positions maintained by PCB - process control block).
- Led a team of 4 and used common project management tools such as Git for team version control and GDB for debugging.

A Video Recommendation Web Application Based on the YouTube Trending Video Dataset Fall 2023

- Developed a MySQL relational DB based web app deployed on Google Cloud Platform (GCP) with functionalities including user authentications, video searching, and video recommendations feed.
- Optimized query performance by implementing advanced SQL query optimizations, creating appropriate indexes, and building caching layers, resulting in an 84%+ reduction in query time and efficient executions of basic CRUD operations.
- Designed and implemented the frontend using HTML, CSS, JavaScript, and Node.js.

TECHNICAL SKILLS

Programming: Java, C/C++, Python, SQL, NoSQL, x86 Assembly, MATLAB, JavaScript
Frameworks: Node.js, React, Vue, Spring Boot, MyBatis, Redis, PyTorch, Flask
Tools & OS: Linux, RTOS, Git, GDB, Unreal Engine5, GCP, MySQL, MongoDB, Docker