Yuxuan Lin

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EDUCATION

University of Illinois at Urbana - Champaign (UIUC)   **Urbana, IL**
B.S. in Computer Engineering   Aug. 2023 - May 2024
- **Relevant coursework**: Artificial Intelligence, Communication Networks, Computer Systems Engineering, Database Systems, Game Development

Zhejiang University (ZJU) | ZJU-UIUC Institute Dual Degree Program   **Haining, China**
B.Eng. in Electronic and Computer Engineering   Aug. 2021 - May 2025
- **Relevant coursework**: Data Structure, Analog Signal Processing, Differential Equations, Computer Systems & Programming, Discrete Mathematics, Linear Algebra

RESEARCH EXPERIENCE

GPU-Accelerated Computation for Electromagnetic Scattering of a Vegetation Model
ZJU Summer Research | Advisor: Prof. Shurun Tan (ZJU/UIUC)   Jun. 2023 - Jul. 2023
- Designed a highly parallel GPU-based algorithm for the Monte-Carlo-based electromagnetic scattering of a double-layer vegetation model.
- Utilized MATLAB under Linux for phase matrices calculating and reduced running time using asynchronous data transfer as well as parallel random number generation in device memory offered by cuRAND library.
- Achieved a significant 93x speed-up with respect to pure-CPU serial computing approach.

The Multi-emotionality Improvement of Text-to-Speech Based on NN   May 2022 - May 2023
ZJU Student Research Training Program (SRTP) | Advisor: Prof. Gaoang Wang (ZJU)
- Participated in weekly group meetings, delivering presentations, and engaging in discussions with other groups to explore fundamental concepts and topics in Deep Learning.
- Led presentations on Neural Networks and conducted in-depth study of articles in the field of Natural Language Processing (NLP).

PROJECT EXPERIENCE

LOS - A Light Linux-Like Operating System   Mar. 2024 – May 2024
- Develop a Linux-like operating system core from scratch, using C and x86 Assembly.
- Applied common development tools including Git on teamwork version control and GDB for debugging.
- Supported fundamental functionalities including interrupts, system calls, multi-terminals for scheduling, virtual memory, and a read-only file system.
- Supported a few devices such as keyboard, RTC, and PIT.

A Video Inspiration Web Application Based on the [YouTube Trending Video Dataset](#)   Nov. 2023
- Developed a MySQL relational database-centric web application in a team of 4.
- Deployed on Google Cloud Platform (GCP), with functionalities including sign up, log in, search by keyword, and personalized inspiration folder.
- Implemented advanced SQL queries and created Indexes to optimize query performance, resulting in up to an 84% reduction in query time, in addition to basic CRUD operations (Create, Read, Update, Delete).
- Designed and implemented the frontend using HTML, CSS, JavaScript, and Node.js for backend.

Fruit-Man: A Maze Game Demo   Feb. 2024 - Mar. 2024
- According to VGA documentation, extended a video game consisting of about 4,000 lines of code with additional graphical features (status bar real-time update) and a serial port device (tux controller from UIUC, like a gamepad).
- Using the pthread API, implemented direction control on the tux controller as well as the keyboard's keys, simultaneously receiving commands from both devices and updating game status affected by RTC.

Cloud Parkour: Demo of a 3D Platformer Game Level   Feb. 2024
- Designed a 3D platformer level game demo using Unreal Engine (UE) 5.3 and Blueprints.
- Added mechanics like health system, collectible items, and created AI controlled pursuer enemies, mortar enemies, player-enemy collisions for interaction.

SKILLS

Programming: C/C++, Python, SQL, x86 Assembly, Golang, MATLAB
Tools: Linux, Git, GDB, Unreal Engine5, GCP, MySQL