Yuxuan Lin

Personal Website | Yuxuan42@illinois.edu | (447) 902-1842

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).

Datasets Generation for Holographic 6G Wireless Communication and Its Application
ZJU Summer Research | Advisor: Prof. Chongwen Huang (ZJU) Jun. 2022 - Jul. 2022

- Applied the Vision-Wireless (ViWi) dataset generation framework to produce integrated visual and wireless data for holographic 6G wireless communication.
- Investigated a deep neural network architecture utilizing convolutional neural networks (CNNs) to predict proactive blockages based on jointly observed mmWave beams and video frames.

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, scheduling, virtual memory, and a read-only file system.
- Supported a few devices such as keyboard, RTC.

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.

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