**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: 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: 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: 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**](https://www.kaggle.com/datasets/rsrishav/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