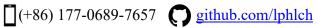
# Pinhao Lyu

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#### Education

#### Tongji University, Shanghai, China

Sep 2020 — Jul 2024

Bachelor of Engineering in Computer Science and Technology

CGPA: 4.76/5.0, Major GPA: 4.91/5.0

Relevant Courses: Computer Architecture, Computer Network, Artificial Intelligence, Software, Engineering, Operating Systems, Principles of Compilers, Methodology of Software Development

Honors: 2020 and 2021 scholarships for excellent undergraduate students of *Tongji* University



# Internship(s)

## Cisco Systems, Inc (China)

Apr — Sep 2023

Software Developer Intern

- Created efficient data crawling scripts using asyncio and aiohttp to facilitate concurrent operations at the coroutine level, improving data acquisition and processing efficiency. Deployed a robust website using Django and an intuitive dashboard to streamline content management and improve user experience.
- Collaborated with cross-functional teams for seamless integration across business groups
- Used advanced tools such as SSH and systemctl to maintain existing Linux server-hosted websites, optimizing uptime and performance and mitigating data asynchrony issues

# Research experience

## 3D Tunnel Leakage Assessment through Enhanced GAN and Swin Transformer Model

Python, Pytorch

Sep 2022 — Feb 2023

- Sourced tunnel face images from various projects and improved dataset management by optimizing a Generative Adversarial Network (GAN) model
- Created a robust tunnel leakage detection and segmentation system using self-attention Deep Learning (DL) models built on the innovative Swin-Transformer architecture
- Contributed to introducing an automated procedure for pinpointing 3D leakage locations on rock tunnel faces, enabling suitable visualization

## Projects

#### **House Price Visualization Information Platform**

Oct 2022 — Jan 2023

Python, Django, MySQL, HTML+CSS+JavaScript, Bootstrap, Docker

- Developed an online information visualization platform offering a dynamic heat-map view of house prices and surrounding amenities, improving user accessibility
- Collected and cleaned public house pricing data using web crawlers and MySQL database for efficient retrieval and used HTML, CSS, JavaScript, and Bootstrap framework for creating a front-end interface
- Implemented an interaction between user inputs and the database through *Django's ModelForm*, creating customized CSS styling, data validation, and comprehensive error display

- Improved UI/UX via asynchronous data submission using *Ajax* technology, supporting seamless data interaction, integrating *Baidu Maps* interface for visualizing house prices data geographically
- Deployed the app using *Docker* containers, ensuring effective distribution

### **Gobang Minigame**

Apr — Jun 2022

Python, PyQt

- Developed a Gobang mini-game using Python in PyQt framework, featuring an AI opponent empowered by the Alpha-Beta Pruning algorithm. The game's primary attributes include human-computer gameplay mode, incorporating automatic win/loss determination and the undo-moves feature.
- Leveraged multithreading to ensure smooth gameplay by preventing interface freezes during AI-based computations and optimized through improved cache hit rates, leading to 3x improvement in efficiency.

## FPGA-based 79-key Electronic Piano with Autoplay and GUI

Nov 2021 — Jan 2022

- Verilog HDL, Vivado
- Implemented a 79-key piano using *Verilog HDL* on the *Nexys4* FPGA board and tested it via *Logisim*, *Modelsim*, and *Vivado*
- Developed features like manual and automatic play, pitch and tempo adjustments, and a user-friendly GUI, which incorporated a display, keyboard, and *buzzer* for a complete UI/UX
- Created four integral piano components: an input and decoding system, a dynamic display system, an immersive buzzer system, and an inbuilt track playback mechanism

## **Curriculum Information Import Script**

Jan — Feb 2021

JavaScript

- Designed an automated tool to integrate course schedules from *Tongji* University's Academic Affairs System into a mobile course schedule app
- Adapted JavaScript code to interface with the Tongji University Academic System via the API, ensuring seamless data exchange. Devised an intelligent mechanism to retrieve and process course schedule information by parsing HTML content from webpages, streamlining data import
- Significantly reduced data entry time from 10 minutes to 30 seconds, improving user efficiency and facilitating 900+ users

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## **Skills**

- Programming Languages: Skillful in Python. Familiar with JavaScript, C++, Java, MySQL
- Frameworks: Skillful in *Django*. Familiar with *Flask*, *React*, *PyOt*, *PyTorch*
- Others: Skillful in Git and Microsoft Office. Familiar with Docker, Kubernetes, Linux
- Languages: Chinese (Native), English (Fluent, IELTS: 7.0)



## **Trainings**

- IBM Full Stack Software Developer Professional Certificate, Oct Jan 2023 Coursera
- IBM DevOps and Software Engineering Professional Certificate, Jan May 2023 Coursera
- *Kubernetes Fundamental*, Jul 2023 Cisco Systems