Xinyu (Jack) Li

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Education

Washington University in St. Louis, Missouri — **St. Louis, MO**
MS, BS Computer Science | GPA: 3.88 — *Aug 2021 - May 2024*
Sewanee: the University of the South — **Sewanee, TN**
BS Computer Science & Mathematics | GPA: 3.77 — *Aug 2018 - May 2024*

Experience

Turing Medical, Software Engineering Internship, St. Louis, MO; *May 2023 – August 2023*

- Built a customer portal with **Golang**. I created the **MySQL** database for the website and wrote the Golang code along with the **HTML/CSS** and **JavaScript**. The website was mainly for the customers of the companies to register, login, learn about the products, request the products, report issues and provide feedback.
- Wrote multiple **Python** scripts with **RestAPI** to download the artifacts(xml files) from the **CircleCI** repository and format them into **Excel** sheets with every test case and its corresponding status.

Washington University in St. Louis, Library Digitization; *September 2021 – May 2024*

- Used high-quality cameras to capture photos of archived books with different conditions and requirements.
- Processed these photos with various standards(exposures, colors, etc.) on **Capture 1** and **Scribe**.
- Archived processed photos into **Excel** and the University's data bank. Have archived over 5,000 books.

Sewanee: the University of the South, Parallel programming & ML Research; *June 2022 – July 2022*

- Built a self-organizing **Raspberry Pi** 3 cluster.
- Tested MPI, openMP, and mpi4py programs (including a Drug Design Simulation and a Forest Fire Simulation) using **C**, **C++**, and **Python** on the cluster and a Raspberry Pi 4.
- Experimented with **TensorFlow** using **Jupyter Notebook (Python3)** on Linux.

Sewanee: the University of the South, Combinatorics of symplectic matroids Research; *June 2021 – July 2021*

- Developed solutions for addressing the algebraic structure of the BC3 group.
- Created a mathematical program using **Python** to generate **symplectic matrices** under different conditions.

Sewanee: the University of the South, Parallel programming & ML Research; *December 2021 – January 2021*

- Built and configured **Raspberry Pi** cluster (Pi 2 and Pi 3).
- Experimented with parallel processing methods (including a Pandemic model) using **C**, **C++**, **Python**.

Projects

Auto Chess Game, **Unity**, *June 2024 – Present*

- Developed a 2D auto chess game.
- Employed the **A* search** algorithm for AI pathfinding**.**
- Designed a turn-based game mechanism.

Get To The Choppa!, **Unity;** *January 2024 - April 2024*

- Developed a 3D FPS game with a theme of zombie apocalypse.
- Programmed all enemies and bosses with **AI pathfinding**, handled the **resource distribution**, and **camera**.
- **Designed levels** and leveraged the **universal rendering pipeline** and fine-tuned the materials and shaders of assets and levels to enhance their realism.

Poker Game *September 2023 - December 2023*

- Developed a **C++** program featuring four games: Uno, GoFish, HoldEm, and Pinochle.
- Implemented local **multiplayer** functionality, running on Terminal.
- Utilized **Object-Oriented Programming** (OOP) and **functional programming** principles.
- Applied **dynamic memory management** techniques throughout development.

Howling Frontline, **Unreal Engine 5**, *October 2023 - Present*

- Developed A 3D tower defense game with a theme of the fantasy world.
- Programmed the enemy **AI**s including the health, combat, and a **wave spawning system**.

Quest to Atlantis, **Unity**, *August 2023 – December 2023*

- Developed a 2D adventure role-play game.
- Programmed the **main character**, the **camera**, the **collectible resources**, and the **lighting**.
- Used **Krita** to create assets for the main character and transformation animations.
- Published our game on itch.io: https://yingxu.itch.io/450finalproject.

Professional Skills

Programming languages: C++, Python, C, Java, JavaScript, Golang, Swift, HTML/CSS
Computer software/ frameworks: PyTorch, Django. Excel, MySQL, Unity, Krita, Unreal Engine 5
Languages: Mandarin Chinese (Native), Japanese (Novice)