Jiayu Hu

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jennyho5.github.io/personal-site

EDUCATION

Bachelor of Computer Science   **Sep 2022-Apr 2024**
Carleton University, Ottawa, ON, Canada
- Fourth-Year Standing, CGPA: **11.50/12.0 (95.83%)**

Bachelor of Management in Accounting   **Sep 2018-Jun 2022**
Zhongnan University of Economics and Law, Wuhan, China
- Final GPA: 3.8/4.0 (89.84%)

WORK EXPERIENCE

Software Engineer Intern | TD Bank, Toronto, ON   **May-Aug 2023**
- Designed and developed business dashboards for the VP using **HTML, CSS,** and **JavaScript** in the integration of **Jira** and **Confluence**'s **REST API**
- Worked as a training coordinator to implement **Agile methodologies** in the fraud team, contributing to the **software development lifecycle** of various fraud products

Audit Intern | Ernst & Young, Shanghai, China   **Jan-Feb 2021**
- Audited and analyzed financial reports for two public companies with **high accuracy under time pressure**
- Maintained open lines of **communication** with both clients and team members

PROJECTS EXPERIENCE

Full-Stack Developer | Fitness Club Website   **Jan 2024-Present**
- Developed a **TypeScript/Node.js** application integrated with **PostgreSQL** for seamless CRUD operations
- Designed and implemented a secure frontend with **authentication** using **Next.js, Mantine, and NextAuth**
- Engineered **database architecture** and optimized **queries** to ensure efficient data retrieval

Frontend Developer | Optical Math Solver App   **Jan 2024-Present**
- Pioneered frontend development with **JavaScript** and **React Native**, leveraged **Figma** for UI design
- closely **collaborated** with backend counterparts, ensuring seamless integration and optimal user experience

Full-Stack Developer | Elevator Simulator   **Jan 2024-Present**
- Designed comprehensive **use cases** and **UML diagrams** to accurately model real-world elevator systems
- Implemented the design in **Qt C++,** ensuring high-quality performance and functionality

Game Developer | Starfield Jumper | Develop at Ubisoft Programming Challenge   **Nov 2023-Jan 2024**
- Programmed a 2D platformer game on **Windows** in **C++** with **clean extensible code** and **well-managed data flow**
- Prototyped the gameplay systems for character movement, combat, AI behaviour, and level design
- Implemented **tilemap system**, **state machine system** and **game object classes** from scratch
- Designed **random algorithms** to generate the tilemap randomly every time a new game level is started
- Used **game programming patterns** such as State, Factory and Singleton to make code cleaner to understand
- Integrated **third-party library OpenGL** and provided API to render graphics on the screen

Game Developer | Mouse in the House | Narrative-Driven Adventure Game   **May 2023-Sep 2023**
- Crafted clean and efficient **C#** code in **MS Visual Studio** to implement intricate **quest, dialogue, save/load systems, etc.**
- **Design game features** such as **animation systems, UI, and level design** using **Unity**
- **Prototyped mechanics** for narrative-driven puzzles and game levels
- Used **game programming patterns** such as Singleton and Observer to make code cleaner to understand

Game Artist | [Nature Calls](#) |Hack the Hill 2023 Game Jam Challenge　　　　　　　　　**Mar 2023**
- **Drew** dynamic characters and background **art assets** using Clip Studio Paint to fit the game theme
- **Collaborated** with game programmers and writers to realize a shared vision of the game

Backend Developer | [Chat Server](#)　　　　　　　　　　　　　　　　　　　　　　　**Mar 2023**
- Developed a real-time chat server using **JavaScript** and **Node.js** with the socket.io module
- Implemented group and private chat modes for multiple browser clients, enhancing interactive communication

Full-Stack Developer | [co:ver letter](#) | SheHacks+7 Hackathon, Western University　　　**Jan 2023**
- Designed a **web application** utilizing the NLG toolkit **API**, achieving a 70% accuracy rate in generating cover letters based on the job description and resume within seconds
- Built the frontend of the web application using **HTML, CSS, JavaScript** and **Bootstrap**
- Built the backend of the web application using **Python** and **Flask**

Game Developer | [Galaxy Shooter](#) | 2D Shooting Game　　　　　　　　　　**Dec 2022-Jan 2023**
- Utilized **Unity** to detect collisions, receive user input, play sound effects and visual effects, etc.
- Programmed in **C#** to implement the logic for the game loop, player, enemies, power-ups, etc.

Full-Stack Developer | [Simple Search Engine](#)　　　　　　　　　　　　　　　　**Sep-Dec 2022**
- Implemented a simple search engine using **Java** and **Python** for accurate keyword-based results from the database
- Utilized **search engine algorithms** such as **PageRank** to measure the importance of each page
- Created an intuitive **GUI** using **JavaFX**, enhancing user experience and facilitating seamless interaction

Team Member | [Empowering Solar Panel with 5G Network](#)| Discover Technata Hacks, Ottawa　　**Sep-Dec 2022**
- Built **functional prototypes** for a mobile app using 5G and IoT to monitor and control the home solar system kit
- Presented the project's technical aspects and potential impact to professionals in **network** fields

Web Developer | [Jiayu's Personal Website](#)　　　　　　　　　　　　　　　**Sep 2021-Present**
- Crafted a dynamic and interactive personal site, leveraging the power of **HTML, CSS, and JavaScript** to showcase a diverse portfolio of projects and artwork on GitHub Pages
- **Updated and maintained** the site using **version control tools** such as **Git** and **GitHub** over a span of three years

TECHNICAL SKILLS
- **Programming languages**: Java, C#, Python, C, C++, HTML, CSS, JavaScript, TypeScript, Haskell
- **Web Development Libraries and Frameworks**: React, React Native, Node.js, Next.js
- **Game Development Engines and Tools**: Unity, C++/OpenGL
- **Database Systems**: PostgreSQL, MongoDB
- **Development Tools**: Visual Studio, Visual Studio Code, Qt Creator
- **Operating systems**: Unix/Linux, Windows
- **Version control**: Git, GitHub

AWARDS AND SCHOLARSHIPS
- 2022-2023 Clarence C. Gibson Scholarship
- 2022-2023 Deans List
- 2022 Discover Technata Hacks, 1st-Place
- 2023 Hack the Hill Game Jam, 2nd-Place