

Ann Esther Joy

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EDUCATION

DePaul University, Chicago, Illinois, USA
Master of Science in Computer Science

3.8 GPA
Sept 2021 - June 2023

Federal Institute of Science and Technology, Ernakulam, Kerala, India
Bachelor of Technology in Computer Science.

June 2014 - May 2018

WORK EXPERIENCE

PlayChemmy Studios, San Francisco, California

Roles: Software Engineering

Jan 2023 - Present

- Worked as a full-stack developer using **Phaser 3** game engine on **AWS EC2** instance to integrate **NFT** game characters called Immortal Player Characters made using the ERC-721 standard into mini-games.
- Managed front-end feature enhancements and conducted ongoing maintenance for myipc.io website, employing **React JS** on a **Node JS** server within a **Docker** system.

Infocom Softwares, Kerala, India

Role: Senior Developer

April 2021 - July 2021

- Developed a mobile roulette machine using C# in the Unity Engine, incorporating an online multiplayer gameplay setup with Photon Networking to provide real-time updates to players.

Ruby Seven Studios, Kerala, India

Role: Game Programmer

June 2018 - April 2021

- Oversaw the front-end development of customized casinos using agile methodology, driving the incorporation of a wide range of features, including user progression, user experience enhancements, and diverse monetization strategies. Our products earned prestigious acclaim, notably receiving the 'Best Interactive Product' honor at the Global Gaming Business Awards. Mystic Slots secured the top position in 2020, while Best Bet Casino achieved second place in 2018.
- Collaborated effectively with **HTML, CSS, and JavaScript** to recreate an immersive casino ambiance for users, seamlessly integrating numerous innovative features that enriched the overall gaming experience. Additionally, took charge of developing backend services using **PHP and MySQL**.
- Designed and implemented a sophisticated **time-based economy system** that precisely assessed user experience in relation to the time invested, leveraging advanced analytics.

INDIVIDUAL PROJECTS

Sound Engine, DePaul University

June 2023

Developed a versatile **C++** audio game engine library, bridging single-threaded applications with multithreaded capabilities. Key features include **real-time loading/streaming, dynamic preemptive priority system, seamless sound transitions, custom user callbacks, and data-driven script playback**.

Multi-Threaded Sound System, DePaul University

December 2022

Developed a multi-threaded system in **C++** designed to concurrently read multiple sound clips, ensuring **seamless playback** of loaded sound clips with zero lag. This achievement was made possible through the incorporation of two file read caches and the utilization of **20 buffers**. These 20 buffers were seamlessly integrated into the Windows Multimedia platform using the **mmeapi**.

Real-Time 3D Game Engine, DePaul University

March 2023

A run-time graphics engine that supports **2D, 3D, and Keyframe animation** was developed along with File System, Memory System, Math Library, and Graphics System. The game engine was then optimized by adding **parallelization** techniques using **GPU computer shaders** to the Vertex and Fragment shaders.

Space Invaders, DePaul University

March 2023

In **C#** designed and built a clone of the arcade version of Space Invaders in the AZUL framework using software engineering principles. **Object-oriented designs** such as Singleton, Flyweight, Iterator, Strategy, Null Object, Factory, Proxy, State, Visitor, Adaptor, Observer, Command, Composite, Object Pools, and Template patterns were implemented to develop a **real-time data-driven system**.

Multi-Threaded System to Solve Mazes, DePaul University

December 2022

A multi-threaded system was created in **C++** to solve mazes by parallelizing two serial methods to solve mazes. A bottom-up approach and a top-down approach were implemented on two threads. The result was achieved by the contact of two threads in the middle. Mazes from a size of 15k X 15k were solved in 2s, which is **2 times faster** than the serial methods.

TECHNICAL SKILLS

Languages: C++, JavaScript, C#, Java, C, SQL, PHP, HTML/CSS, React JS, JSON

Game Engines: Phaser 3, Unity, Cocos2d-x

Operating Systems: Linux, Windows, macOS

Tools: WebStorm, Visual Studio Enterprise, Photoshop, Blender, Git, GIMP, Tiled, Docker, Node JS