

Education

- **Mathematics, Minor,** University of Missouri-Columbia, MO, USA.
- **Computer Science, BSc,** University of Missouri-Columbia, MO, USA.

2021 - 2025
2021 - 2025

Projects

C++ Game Engine

2022 - Present

Developer, System designer

- Uses OpenGL to render 2D and 3D scenes as an application.
- Implements custom Entity-Component-System (ECS) and State Machine data structures to control flow of information.
- Utilizes self-made mathematics, vector, matrix, physics, and input handling libraries.
- Deserializes object and font files without external libraries.

Entity-Component-System

2023 - 2024

Developer, System designer

- Cache-friendly data structures utilized to provide fast index-based data access.
- Automatically registers new component data types without additional boilerplate.
- Assigns entities to systems based on the components they have attached.
- Allows for the creation of custom functions and function categories that systems can utilize for flexibility.

Unity Game Engine: A Fool's Errand

2024 - 2025

Developer, Artist, Animator, Level designer

- Developed as university project in a 4-person group.
- 2D side-scrolling platformer demo with hand-drawn art style.
- Used vector mathematics to control character and enemy movement/projectiles.

Godot Game Engine: CartographOS

2025 - Present

Developer, UI designer, System designer

- Mimics Windows CLI, including basic command line commands (help, clear, ls, cd, etc.).
- Implements a basic file system accessible from CLI, made up of binary, text, executable, and directory file types.
- Utilizes a small custom assembler to translate low level program text files to machine code.

Work Experience

Marcus Theatres

May 2021 - August 2021

Concessions worker

- Provided experience with customer service, handling transactions, and maintaining clean workspaces.

Dairy Queen

May 2023 - August 2024

Kitchen, Register attendant

- Provided experience with rapid task-switching, attention to detail, working in small teams, and creating in-depth instructions for new employees.

Technologies and Languages

- Languages: C, C++, Java, C#, Python, JavaScript
- Technologies: MySQL, HTML/CSS, Git, Unity, Godot, Unreal, GLSL, Docker, numpy, pandas
- Other: Data structures and algorithms, Graphics programming, Operating systems

Interests

- I regularly draw for enjoyment and incorporate visual design into my development projects.
- I enjoy books with deep character development and world-building, which enhances my creative thinking.