Emmy Voita

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EDUCATION

Grand Canyon University - Phoenix, Arizona   **Graduation: Fall 2024**
Bachelor of Science in Computer Science

Relevant courses:

- Operating Systems
- Computer Graphics
- AI in Games and Simulations
- Information Security
- Principles of Database Design and Programming

- Computer Architecture
- Applied Linear Algebra
- Principles of Compiler Design
- Principles of Programming Language
- Principles of Modeling and Simulation

SIGNIFICANT ACADEMIC WORK

C, Yacc, & Bison Compiler   **Fall 2023**
- Developed a C compiler focusing on optimizing Intermediate Representation and MIPS code generation. Implemented advanced compiler optimization techniques alongside detailed debugging visualizations and diagnostics to aid in the compilation process.

Garden Recall – Unity Mobile Memory Game   **Spring 2023**
- Developed a Unity-based mobile visual memory game as part of a research-driven course on current trends in computer science. Utilized an Agile environment with two-week sprints, incorporating Scrum practices and AI-assisted development. Implemented UI flow based on user personas, conducted user testing, and integrated the project into a larger class app to evaluate AI's role in software development for a publishable study.

OpenGL Deferred Rendering Pipeline   **Spring 2023**
- Built a deferred rendering pipeline in C++ using OpenGL, with support for loading and rendering Blender-exported OBJ files. Enhanced visual fidelity through the implementation of SSAO and parallax mapping using a custom G-buffer.

Galactic Heist Prototype   **Spring 2023**
- Developed and iterated on a complete game concept as part of a game design course. Created a full Game Design Document (GDD), physical board game prototype, and implemented an early-stage digital prototype in Unity to test core mechanics.

SIGNIFICANT PROJECTS & EXTRACURRICULAR

Real-Time Physically-Based Sky & Cloud Rendering Pipeline   **Fall 2023 - Present**
- Designed and implemented a flexible, real-time atmospheric rendering tool in Unity, allowing users to create and customize physically-based skies and volumetric cloudscapes. Developed a compositing system that encodes and upsamples data using TAAU, enabling visually consistent results across dynamic lighting conditions—including day-night transitions—while maintaining real-time performance.

Unity FSM Character Controller   **Spring 2024**
- Designed and implemented a modular character controller in Unity using a finite state machine architecture. Applied object-oriented programming principles to create highly reusable and maintainable code for future game projects, enabling clean separation of movement, state logic, and animation control.

SKILLS

Programming languages:

- **Proficient:** C#, HLSL, C++, GLSL, C
- **Previous Experience:** Java, JavaScript, React, Kotlin, MySQL, MongoDB, PHP, Python

Development Tools: Jira, RenderDoc