

William Schmitz

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Key Skills

- **Programming Languages:** JavaScript, Java, C, C++, Python, SQL, PHP, BASH, markdown, HTML, CSS, TypeScript
- **Technologies:** Linux (Fedora, Ubuntu, Debian), Mac OS X, Windows, Wordpress, Godot, Unreal Engine, SteamWorks API, Docker, RESTful APIs, github, git, github tasks, Amazon Web Services, React Native, React, JUnit, Postman
- Organization through github tasks and documentation, ability to help teammates with fixing errors, ability to clearly communicate design intentions

Education

Bachelor of Science in Computer Science

Colorado State University, Fort Collins, Colorado
May 2025

Bachelor of Fine Arts in Electronic Arts

Colorado State University, Fort Collins, Colorado
May 2022

Projects

Project Management System | CS415 Software Testing & Development

- Developed a full-stack application in a team of 5 using Java backend running on linux and a React frontend
- Implemented core business logic using object oriented design principles
- Applied input space partitioning, mutation testing, and static analysis
- Implemented and utilized testing tools including JUnit, JaCoCo, PIT, PMD, EvoSuite, Randoop, and Mockito
- Used Git version control and agile development methodology

Compiler Project | CS453: Introduction to Compiler Construction

- Created a type-checking system using AST traversal and a visitor pattern, constructing a hierarchical symbol table to enforce semantic rules and validate inheritance hierarchies.
- Translated object-oriented Java code to efficient intermediate representation, resolving method dispatch via virtual method tables.
- Designed a linear scan register allocator with register spilling. Using control flow graphs and liveness analysis to map variables to registers.

- Validated compiler correctness through systematic unit/integration testing using Gradle

Steam Multiplayer Game Development

- Developed a Steam game demo using the Godot Engine, SteamWorks API, and git
- Implemented custom networking solutions to create a multiplayer experience with the Steam network API
- Established a testing pipeline using Discord to collect user feedback and implement improvements
- Applied agile development practices during production

Pet64 - Full Stack Social Media Art Platform

- Built a complete web application enabling users to create 64x64 pixel art with a custom JavaScript drawing engine community gallery features
- Implemented custom drawing system with responsive touch and mouse controls
- Designed MySQL database architecture with PHP APIs for user management, artwork storage, social features (likes/comments), and automated content moderation
- Successfully migrated backend from traditional hosting to Cloudflare Pages Functions, improving performance and demonstrating adaptability to modern serverless architecture
- Created mobile-first design with CSS and cross-device compatibility using JavaScript

Work Experience

Calculus Tutor

Front Range Community College, Fort Collins, Colorado
Fall 2024

- Provided one-on-one in person tutoring assistance to college students in classes: algebra, trigonometry, statistics, and calculus.
- Developed communication skills by explaining difficult problems and mathematical concepts
- Created custom learning materials to address individual needs