

# Grayson Clark

Portfolio: [faultypine.github.io](https://faultypine.github.io)

Github: [github.com/FaultyPine](https://github.com/FaultyPine)

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## EDUCATION

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- Indiana University** Bloomington, Indiana
    - Bachelor of Science - Computer Science; GPA: 3.7* *August 2020 - June 2024*
    - Courses: Data Structures and Algorithms, Discrete Structures, C#, Python, Java*

## SKILLS SUMMARY

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- Languages:** Python, C++, C, Java, Rust, C#, HTML/CSS, JavaScript
  - Tools:** GIT, GDB, AWS, WSL,
  - Platforms:** Windows, Linux, Web, Raspberry
  - Soft Skills:** Communication, Organization, Time Management, Conflict Resolution, Cooperation

## EXPERIENCE

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- Netcode Consultant - ThirdPixel Interactive - Smack Studio** Remote - Contractual
    - <https://thirdpixelinteractive.com/>* *February 2022 - Present*
    - Meetings:** Attended meetings with the team and answered questions about Rollback Netcode
    - Codebase Analysis:** Analyzed the team's codebase and provided advice/resources about recommended infrastructure
  - Camp Counselor** In-Person
    - Counselor (Full-Time)* *May 2015 - July 2020*
    - Led and was responsible for a group of 13 kids
    - Coordinated and led group activities for campers and counselors
    - Helped campers build confidence and self-esteem through consistent guidance and mentoring
    - Collaborated with staff to establish and maintain supportive and structured environment
    - Maintained effective consistent communication with parents and families

## PROJECTS

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- Brawlback - multiplayer client (Deterministic Lockstep, Speculative Execution, Client Synchronization, Peer-To-Peer Networking):** (Work in Progress) Peer-To-Peer Networking client for Super Smash Bros Brawl with Integrated Matchmaking that allows players to instantly play with each other even in volatile or poor network conditions.
  - HewDraw Remix - overhaul modification (Rust, Code Injection):** (Formerly lead developer) open source modification of Super Smash Bros Ultimate. Was responsible for framework restructuring/maintenance, basic CI/CD infrastructure, an auto-updater/launcher, and gameplay modifications. Currently we have around 25 contributors and 4000 active players. The project is composed of approximately 100,000 lines of Rust, as well as python scripts for automating various tasks and infrastructure
  - UltimateModShop - user-facing shop/management app (GUI, Web API, Embedded Software):** a homebrew application written in C++ for the Nintendo Switch that allows users to download, install, and manage Smash Ultimate mods directly on their switch, using the GameBanana web API.
  - Skyline Plugins (Embedded Software, Reverse Engineering, Code Injection):** Used the Skyline framework to inject custom code into a given running process. Interfaced with the Nintendo Switch's developer SDK to perform file IO, networking, etc. Reverse engineered and interfaced with game code to properly perform code injections and overwrite ingame behavior with our desired behavior.
  - Store Manager - command line store inventory manager (Java, file IO):** Created a command line program in Java that manages a pretend store. Takes commands from a file and manages inventory, creates and validates staff schedules, and provides a graphical interface to the user that can locate specific items in the pretend "store".
  - Unity Projects - game development (Unity, Shaders, Rendering):** Created various Unity projects that recreate game mechanics from popular games. Includes Cel Shading, Particle Systems, UI Integration, Image Effect Shaders, Water Shaders