

Benedict Ozua

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EDUCATION

Carnegie Mellon University

Aug 2021 – May 2025

- Bachelors of Science in Computer Science
- 3.5/4.0 GPA

EXPERIENCE

Roblox

May 2023 – Present

Software Engineer Intern

San Mateo, CA

- Developed an animated loading screen utilized by 3,000,000+ users while minimizing added join latency via C++, Qt, Figma
- Optimized image availability by caching 100+ images with LRU policy to reduce image API calls with a 99% cache hit rate
- Deployed performance metrics to measure millisecond difference between load screen popup time of an old load screen and the new load screen
- Persisted cached images across Roblox studio sessions using local storage

Carnegie Mellon University

June 2022 – Aug 2022

Undergraduate Research Assistant

Pittsburgh, PA

- Developed Byzantine server implementation to disrupt consensus in MIT's CBDC project utilizing docker, C++, Asio, and NuRaft
- Wrote a Common Vulnerabilities and Exposure report (**CVE**) to showcase a vulnerability in **Ebay's** Nuraft source code
- Ran benchmarks on byzantine implementation of NuRaft to visualize effects on a distributed environment
- Documented code to help Ph.D. team understand implementation code, and communicated with NuRaft maintainers

PROJECTS

Automated Program Repair | *Python, OCaml, Z3*

April 2023 – May 2023

- Automated fixing bugs in toy language (W3A) using z3 and Python
- Implemented W3A interpreter with integer and array types in Python
- Extended W3A language interpreter and compiler with array types in OCaml
- Utilized concolic execution to generate symbolic constraints and z3 to synthesize program fixes

Instagram Post Formatter | *Python, Google Cloud, App Script*

Aug 2022 – Sep 2022

- Automated converting Google form submissions to instagram posts for an Instagram page with over 3000 followers
- Processed over **250** google form submissions using utilizing Google Drive and Google Cloud API
- Reduced time to make a instagram post from 20 minutes to 1 minute
- Hosted flask backend with and stored potential posts to continuously process forms using App engine on Google Cloud

Chain Reaction Game | *Go, JavaScript, HTML/CSS*

Dec 2020 – Sep 2022

- Dec 2022 Built an online game to handle at least 900 players leveraging Render for hosting
- Developed an AI to defeat players using Minimax algorithm with alpha-beta pruning optimization
- Implemented a chat box to allow players to communicate with each other at all times
- Leveraged Websockets to allow multiplayer mode for up to 24 students to compete

TECHNICAL SKILLS

Languages: Python, Go, C, C++, Ocaml, SML/NJ, JavaScript, Typescript, HTML/CSS

Technologies: Qt, JIRA, Confluence, z3, Figma, Google Cloud, Docker, NuRaft, Asio, WebSockets

Interests: Basketball, Working Out, Cooking, Chess Puzzles