# CHRISTOPHER MUNOZ

(773) 849-7869 | contact@cwmunoz.com | Chicago, IL

## EDUCATION

**University of Illinois Urbana-Champaign** May 2024

*Bachelor of Science in Statistics*

- **Relevant Coursework:** Data Structures, Computer Architecture, System Programming, Discrete Structures

## TECHNICAL SKILLS

- **Languages:** C++, C, x86 Assembly, C#, Lua
- **Tooling:** CMake, x64dbg, Interactive Disassembler (IDA), ReClass.NET
- **Application Technologies:** Win32 API, Dear ImGui, Direct3D

## EXPERIENCE

**Amazon Web Services** Seattle, WA

*Software Development Engineer Intern* *May 2023 – August 2023*

- Developed an auditor using Java that detects deadlocks in a concurrent change control system
- Integrated auditor with ticketing system to alert on-call engineers of issues before they severely impacted customers
- Optimized a low-level service to evict unused records in database to reduce the database's memory footprint

**Department of Computer Science at the University of Illinois Urbana-Champaign** Champaign, IL

*Introduction to Computer Science II Course Assistant* *June 2022 – May 2024*

- Explained programming concepts in C++ such as pointer indirection and memory management to best prepare students for the succeeding course in *Data Structures & Algorithms*
- Acquainted students with best practices for creating safe code in C++ and how to effectively use a debugger to improve iteration time for their assignments
- Cooperatively facilitated weekly discussion sections with graduate teaching assistants covering recent lesson material and host bi-weekly in-person office hours
- Developed graded homework programming assignments for students to complete

**Department of Computer Science at the University of Illinois Urbana-Champaign** Champaign, IL

*Introduction to Computer Science I Course Assistant* *January 2022 – May 2022*

- Assisted students with basic object-oriented programming concepts such as encapsulation, abstraction, inheritance, and polymorphism using Java
- Guided students through programming problems to prepare them for a cumulative end-of-semester project
- Introduced basic data structures and algorithms such as linked lists, graphs, and trees

## PROJECTS

**Grand Theft Auto Modification Suite** *June 2021 – Present*

- Developing a modification suite for *Grand Theft Auto V* using C++ to allow users to mod the game, built on the RAGE reverse engineering project
- Implement a file explorer to browse the contents of a proprietary packfile format, which contains encrypted and compressed game files
- Develop specialized viewing models for each resource type by converting the binary resource data into user-friendly displays, such as a 3D model viewer for drawable resources
- Maintain exporters and resource compilers that allow users to convert between the game's binary formats and intermediate text formats, which can later be consumed by other tools such as 3DS Max for editing
- Develop a custom multithreaded job system to significantly parallelize the application, which effectively scales with the user's hardware

**RAGE Reverse Engineering Project** *February 2021 – Present*

- On-going reverse engineering project for the proprietary Rockstar Advanced Game Engine (RAGE), the engine that powers titles such as *Grand Theft Auto V* and *Red Dead Redemption 2*
- Utilize Hex Rays Interactive Disassembler to reimplement the game engine's undocumented core low-level structures and subroutines, in order to create software that can interop with games using RAGE