

# Josef Bertolini

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## EDUCATION

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University of California, Irvine June 2021  
B.S. in Computer Science, B.S. in Computer Game Science GPA: 3.74  
Coursework: Advanced C++, Systems Design, Compilers, Operating Systems, Videogame Development, Full Stack WebDev

## PROFESSIONAL EXPERIENCE

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**Major League Hacking, US DoD joint** October 2020 - Present  
*MLH Fellow (Software Engineering Intern)* JavaScript

- Created a web app for automating, streamlining, and securing the processing of DD2875 System Authorization Forms
- Built the **RESTful API** with **Node.js**, **Express**, and **PostgreSQL**; also composed the schema for the Database
- Incorporated app security by using **SSL Authentication** with https and the **Helmet.js** library

**KPX Engineering** June 2019 - September 2019  
*Assistant Data Analyst* Python

- Contracted to complete a project pertaining to staffing and speed of service for Taco Bell Corp.'s International branch
- Wrote **Python3** scripts to parse, compound, and analyze data in six-figure long Excel sheets using **openPyXL**
- Presented reports of analyzed data to the Director of Global Operations

## RELEVANT PROJECTS

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**Season's Beatings** May 2019  
**Unity, C#**

- Top Down Beat 'em Up made in Unity in 4 weeks, served as **the primary gameplay programmer**
- Blueprinted and Implemented the weapon and combat systems of the game using Unity's C# scripting API; including controls, object interactivity, and balancing
- Formed a scalable system using Polymorphism and Unity Prefabs, which eased the workload during expansion

**Crux Compiler** April 2020 - June 2020  
**Java**

- Wrote a compiler for a simple LLVM Language in **Java** called Crux
- Implemented a top-to-bottom compiler from grammar structure to x86\_64 code generation using ANTLR4
- Developed the language to supports function definition, recursion, control flow structures, and strong typing with static scoping and variable shadowing

**Macro-Nutrient Tracker** August 2020  
**WPF (XAML + C#)**

- Created a **GUI application** that tracks macro-nutrients and weight change for multiple users
- Utilized multiple **XAML** pages and a custom library to navigate through various data stored by the application
- Framed the system to automatically keep in sync with days of the week and store past data

**Chatroom Server** December 2020  
**C**

- Developed the **server-side** of a chatroom application akin to Google Hangouts
- Used the **POSIX** thread library to make a safe and high-performance application that can support an arbitrary number of concurrent users and chatrooms
- Implemented **Thread-Safe Generic HashMap, HashSet, and Vector** data structures from scratch

## SKILLS AND AWARDS

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**Colorado Lottery 2020 Game Jam**

- Team won 2nd place out of 208 participants
- Designed and Drafted a prototype for a monitor game to be played in bars and restaurants across Colorado

**Programming Languages and Tools**

- Proficient: C++, C, Unity Game Engine, C#, Java, Python3
- Familiar: JavaScript, Node.js + Express, Unreal Engine 4, Rust 2018, Go
- Environments: Visual Studio, JetBrains IDEs, Linux CLI

**Interpersonal Skills**

- Sociable, Adaptable to new Environments, Team Player
- Quick Learner, Clear Communicator, Passionate