

Chandler Calkins

Software Engineering Profile

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Portfolio: <https://chandlerjaycalkins.github.io/>

Analytical and technically astute software development professional with advanced knowledge of computer science, robotics, disciplined coding, programming, and cybersecurity. Skilled in designing, developing, deploying, and debugging dynamic software applications. Keen eye for detail with proven ability to translate mathematically intensive algorithms into software requirements and tool specifications. Adept at leveraging industry-leading technologies and methods to deliver innovative solutions for sustainable software optimizations. Forward-focused individual, collaborating with teams to build best-in-class products and game designs while nurturing next-gen software developers/engineers through technical guidance.

Areas of Expertise

- Software Engineering
- Software Coding & Programming
- Robotics & Machine Learning
- Team Collaboration
- Game Design
- Compiler Design
- Digital Forensics
- Project Management
- Database Management
- System/Software Optimization
- Training & Development
- Cybersecurity Operations

Technical Proficiencies

Languages: C, C++, Python, Java, Rust, JavaScript, PHP, C#, HTML, CSS, SQL
Tools/Systems: MySQL, Linux, Unix, Bash/Shell Scripting, Raspberry Pi, Discord.py API
Platforms: GitHub, Unity

Career Experience

Eastside Skill Samurai, Redmond, WA
Coding and STEM Coach

2023 – Present

Conduct after-school coaching sessions on coding, robotics, programming, and STEM subjects for K-12 students. Prepare and implement diverse programming curricula on Scratch, Roblox game-making, Minecraft modding, and Python. Collaborate with fellow coaches to guide and monitor students' engagement in practical projects. Address students' concerns, provide project-related solutions, and encourage critical thinking among pupils. Ensure learning outcomes adhere to industry standards.

- Created comprehensive Python curriculum, including lesson plans and homework for Environmental and Adventure School; tutored students, scripted experimental code for students, and encouraged active participation.
- Taught lessons on Roblox game-making, Scratch programming, Ozaria, and Vex Robotics at Emily Dickenson and Albert Einstein Elementary.

University of Idaho, Moscow, ID
Optimization Engineer

2022 – 2022

Performed extensive research on experimental grammar-based fuzzing tool developed by a former PhD student. Utilized deep knowledge of algorithms to review individual codes and understand component-wise functionality; added comments and optimizations to facilitate future readability. Enhanced tool's efficiency by rewriting codes and building program-specific grammar to improve fuzzing input. Prepared reports on research and test results.

- Reduced tools' runtime by 10%-40% by eliminating irrelevant code and replacing $O(N^2)$ algorithm with $O(N)$ algorithm.

Additional experience as Auction Assistant at Maxsold, Seattle Area, WA.

Education

Bachelor of Science (B.S.) in Computer Science, 2023

University of Idaho, Moscow, ID

Lead Software Engineer for Robotics Club (Mobile Robot Team).

Cybersecurity Undergraduate Academic Certificate, 2023

University of Idaho, Moscow, ID

Project Highlights

Robotic Assembly of Solar Arrays

- Project aimed to assemble solar arrays for NASA through two Denso robotic arms.

Capstone Meeting Discord Bot

- Project aimed to track day-to-day duties and meetings for Senior capstone Project Team.

Database-Website Interface Project

- Website used to streamline users' submission of queries to a product and service database with multiple search types.

Wonky Wizards

- Built 2D tower defense and shooter game demo on Unity.

TF2 Match Predictor Neural Network Framework

- Project aimed to predict Team Fortress 2 matches' outcomes by developing neural networks based on teams' player line-up.

Quad Legged Walking Bot

- Created codebase for four-legged spider-like robot.

C- Compiler

- Project aimed to create executable files for Tiny Virtual Machine by compiling C- programming language.

Random Sound Discord Bot

- Joined voice channels at flexible times and play random sound files uploadable to the bot.

Python Viruses

- Created and utilized demo viruses, capable of infecting python files, to run malicious code.

D&D Spellbook Generator

- Library for applications that produce PDF documents of Dungeons and Dragons spells.

Certifications

PenTest+ – CompTIA – 2023

Awards

Second Place (Northwest Regional) – NCAE Cyber Games, University of Idaho

Eagle Scout – Scouts BSA, Troop 356

Served as Senior Patrol Leader, Assistant Senior Patrol Leader, Patrol Leader, and Order of the Arrow Representative.