Aiden Benner

Software Developer

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Technical Skills

Languages: C++ // Python // Java // C# // C // JavaScript // Scala
Technologies: Git // Bash // Unix // Boost // Android // React // Django

Experience

Citadel Securities

New York City

Software Developer Intern (FTAP) - Fixed Income Market Making — *May 2019 - Present*

- Created a real time concurrent C++ service that tracks and publishes pricing relationships between treasuries
- Improved large dataset performance and core features for trader grid tooling using WebSockets, C++ and JavaScript
- Developed a multithreaded distributed tracing C++ library using multicast UDP sockets to track trades across services
- Extended high performance concurrent C++ utilities to take snapshots of market data for quantitative research and real time trading applications

Google

Waterloo

Software Developer Intern - Chrome — *Sep 2018 - Dec 2018*

- Improved stability of Chrome by creating build tools to mock Java classes that include native code
- Decreased binary size by compressing native symbols by generating Java and C code to wrap native declarations
- Added support for Python autoformatting in chromium developer tools by using Python to parse git diff output
- Developed static analysis rules to detect redundant field initializations by processing the Java AST

A Thinking Ape

Vancouver

Software Developer Intern - LiveOps/Fullstack — *Jan 2018 - May 2018*

- Created tools to automate adding and balancing in-game items saving designers hours per iteration cycle
- Designed a service using Django that sends users notices and push notifications for important in-game events
- Developed a news activity on iOS/Android that lets players receive and manage in-game alerts and notifications

Localintel

Calgary

Software Developer Intern - Fullstack — *May 2017 - Sep 2017*

- Created a service that generates pdf reports from municipal microsites for clients using LaTeX, Angular 2, and C#
- Developed an automated visual CI regression test utility using phantomjs and Node.js to detect frontend changes
- Designed a Python utility to compile site usage data into internal metric reports and graphs using matplotlib

GEO-SLOPE International

Calgary

Software Developer Intern - Fullstack — *July-August 2014, 2015, 2016*

- Developed a webservice, using C# and SQL, to parse analytics XML from thousands of GeoStudio sessions daily
- Created a utility using C# that uses license data to send customers reminders, automating hours of work weekly

Education

University of Waterloo, Candidate for Bachelor of Software Engineering

3.9+/4.0 ENG/MATH Faculty cGPA — *2016 - 2021 (Expected)*

Projects

Halite 3
C++
- Ranked 1st in AI bot competition at the undergrad level, 7th/4000+ overall
- Uses the Hungarian algorithm for job assignment and order dispatching

Chip8
C++
- Emulated the CPU/memory/graphics/io of a Chip8 VM and created a disassembler for debugging
- Reads and plays retro game roms (tetris/pong/space invaders)

Raytracer
C++
- A realistic graphical renderer and vector math library that simulates light ray projection
- Supports reflections, refractions, translucent material and soft shadows using montecarlo rendering

Lacs Compiler
Scala
- Compiles a subset of Scala into Mips assembly using CYK parsing and an abstract syntax tree
- Supports closures, inner functions, first class functions, garbage collection, and type checking

Genetic Art
Python
- Generates art by recreating a source image using as few basic shapes as possible
- Uses a mixture of genetic algorithms and hill climbing heuristics to minimize squared pixel distance