

## Nathaniel Saxe

### Education:

B.S. Computer Science from University of Virginia (2020)

### Relevant Skills:

Troubleshooting - my single biggest talent is identifying the source of a bug and designing a robust fix for it.

Optimization - nothing gives me greater joy than profiling an application and removing the bottleneck.

Mathematics - I like math and TCS and always try to further my knowledge of it.

Automation - Comfortable abstracting away tedious work at any level.

Proficient in: C++, Python, Rust, Java, C#

Ok at: JavaScript, Go, bash, CUDA C, I can read assembly if it comes to that

Github - proficient

Game development using Unity - proficient

Team Leadership - proficient

I have used: django, React, Docker, numpy/pandas, MPI, Kafka, Spark, Travis CI, Cargo

I know these words: MVC, ECS, RAI, Map-Reduce, salting, sharding, flamegraph, DRY

### Relevant Coursework:

CS 6161 - Algorithms

CS 4810 - Computer Graphics

CS 4774 - Machine Learning

CS 4730 - Computer Game Design

CS 4444 - Parallel Computing

CS 4414 - Operating Systems\*

CS 4260 - Internet Scale Applications

CS 3330 - Computer Architecture\*

CS 3240 - Advanced Software Development\*

CS 2150 - Program & Data Representation\*

PHYS 2660 - Fundamentals of Scientific Computing

(\* := course was required for major)

### Experience:

Director - Student Game Developers: Oversaw the development of two games in Unity, managing a team of 13 for each game and programming many of the games' core systems. Provided introductory Unity help to many on both teams, and learned to delegate tasks according to individuals' comfort level.

Teaching Assistant - University of Virginia: TA'd for CS 4102 (Algorithms) for three semesters and CS 2102 (Discrete Math) for one semester.

Game Engine - personal project: I am making a 2D game engine in C++ to learn how it's done. Notably, I implemented GJK collision detection, used code generation to facilitate an ECS-like architecture, and used the flamegraph profiling tool to locate the best optimizations.