

Max Slater

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EDUCATION

CARNEGIE MELLON UNIVERSITY

COMPUTER SCIENCE (BS)
SYSTEMS (CONCENTRATION)
MATHEMATICS (MINOR)
2018-2021 | Pittsburgh, PA
GPA: 3.95 / 4.0

UNIVERSITY OF NEVADA, RENO

2014-2018 | Reno, NV

THE DAVIDSON ACADEMY OF NEVADA

2012-2018 | Reno, NV

LINKS

GitHub://TheNumbat
LinkedIn://TheNumbat

COURSEWORK

Operating System Design and Impl.
Compiler Design
Algorithm Design & Analysis
Computer Graphics (TA)
Introduction to Computer Systems
Parallel and Sequential Data
Structures and Algorithms
Great Ideas in Theoretical C.S.
Discrete Differential Geometry
Multidimensional Calculus
Matrices and Linear Transformations
Probability and Computing
Principles of Real Analysis

PROGRAMMING

Languages:

C++/17 • C • SML • Python • Bash

Tools:

OpenGL • Metal • Win32 • Linux •
Git(Hub)

EXPERIENCE

APPLE | GPU SOFTWARE INTERN

Summer 2020 | Reno, NV

- Developed a novel automated tool for comparing GPU frame traces across platforms, increasing iteration speed for competitive performance analysis work.
- Selected to present project to SVP Craig Federighi and his team.

CARNEGIE MELLON UNIVERSITY | 15-462 COMPUTER GRAPHICS

TEACHING ASSISTANT

Jan 2020 - Present | Pittsburgh, PA

- Re-wrote the course codebase, improving structure, performance, interface, and student directions/documentation (See projects: Scotty3D).
- Held solo office hours, answered online questions, and assisted with project/exam grading.
- Updated/designed take-home quizzes.

NVIDIA | 3D GRAPHICS SOFTWARE INTERN

Summer 2019 | Santa Clara, CA

- Constructed automated testing service measuring OpenGL/Vulkan graphics performance on Linux devices. Service used by the embedded team to catch regressions and bring-up new silicon.
- Profiled and diagnosed OpenGL benchmark performance bugs.

UNIVERSITY OF NEVADA, RENO | RESEARCH INTERN

May 2015 – May 2016 | Reno, NV

- Assisted in wireless networking research under Dr. Shamik Sengupta supported by NSF Grant #IIA-1301726.
- Authored and published a white paper on the subject.

PROJECTS

SCOTTY3D | C++, OPENGL, SDL

Dec 2019 - Present | [GitHub Org](#)

- Educational software package implementing interactive 3D mesh editing, realistic path tracing, and dynamic animation.
- Includes code structure & guidelines for student projects in each respective area. Used in CMU 15-462 as a framework for implementing assignments.
- Currently re-implementing core systems as well as adding an OpenGL/Vulkan back-end, all-new user interface, C++17, many fixes/optimizations, and improving directions/resources for student tasks.

EXILE | C/C++, OPENGL, WIN32

Jul 2017 – Present | [GitHub](#)

- *Handmade* from-scratch voxel game engine including a modern OpenGL deferred renderer, parallel voxel world generation, multiple OS layers, a custom C++ standard library with automatic type introspection, debugging/profiling features, and more.
- Technical blog posts at [thenumbat.github.io](#).

DAWN | C++, OPENGL, SDL

Aug 2019 | [GitHub](#)

- Path tracer with a focus on performance through data-oriented design.