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

Compiler Design
Operating System Design and Impl.
Algorithm Design & Analysis
Computer Graphics (TA)
Great Ideas in Theoretical CS
Discrete Differential Geometry
Multidimensional Calculus
Matrices and Linear Transformations
Probability and Computing
Principles of Real Analysis

PROGRAMMING

Languages:
C++/17 • C • Rust • SML • Python • x86 • 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 | Course Page

- 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.
- Re-implemented core systems, added a modern OpenGL/Vulkan back-end, all-new user interface, C++17, many fixes/optimizations, and improved 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.

PEBBLES KERNEL | C, x86
Mar-May 2020

- x86 Kernel supporting device drivers, preemptive multitasking, virtual memory protection, threading, and virtual consoles.
- Worked with partner to design & implement features from scratch.