

# Max Slater

thenumbat.github.io  
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## EDUCATION

### CARNEGIE MELLON UNIVERSITY

BS COMPUTER SCIENCE  
COMPUTER SYSTEMS  
2018-2022 | Pittsburgh, PA  
Cum. GPA: 3.94 / 4.0  
Major GPA: 4.0 / 4.0

### UNIVERSITY OF NEVADA, RENO

2014-2018 | Reno, NV  
Cum. GPA: 4.0 / 4.0

### THE DAVIDSON ACADEMY OF NEVADA

2012-2018 | Reno, NV  
Cum. GPA: 4.0 / 4.0

## LINKS

GitHub://[TheNumbat](#)  
LinkedIn://[TheNumbat](#)  
Twitch://[The\\_Numbat](#)

## COURSEWORK

Operating System Design and Impl.  
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

## PROGRAMMING

Primary (40,000+ lines):

C++

Other:

C • C++17 • SML • Python • Bash

Tools:

OpenGL • Win32 • Linux • Git(Hub)

## EXPERIENCE

### CARNEGIE MELLON UNIVERSITY | 15-462 COMPUTER GRAPHICS TEACHING ASSISTANT

Jan 2020 - Present | Pittsburgh, PA

- Led re-writing effort for the course codebase, Scotty3D. (See projects.)
- Held office hours, answered student questions, and assisted with assignment/exam grading.

### NVIDIA | 3D GRAPHICS SOFTWARE INTERN

Summer 2019 | Santa Clara, CA

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

### MASQUERADE MEDIA INC. | SOFTWARE ENGINEERING INTERN

Summer 2017 | Reno, NV

- Contributed to a mobile game production pipeline including asset processing, scripting, gameplay prototyping, and testing using Unity and Maya.
- Designed and implemented web-based promotional games driving customer acquisition.

### 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

### EXILE | C++, OPENGGL

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 standard library, type introspection, debugging/profiling features, and more.
- Tech blog at [thenumbat.github.io](#).

### DAWN | C++, OPENGGL, SDL

Aug 2019 | [GitHub](#)

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

### (NEW) SCOTTY3D | C++, OPENGGL, SDL

Dec 2019 - Present | [GitHub](#)

- Educational software package implementing interactive 3D mesh editing, realistic path tracing, and dynamic animation.
- Currently rewriting legacy codebase with new UI, modern OpenGL, C++17, fixes/optimizations, and student-focused explanations.