



### Overview

Seeking a position constructing cross-platform developer SDKs. Knowledgeable about data-driven design for rapid iteration, working in small teams, and being a highly independent abstract-problem solver. I want to make great tools that developers enjoy using.

#### Languages

C, C++, Obj-C  
Lua, Python, JavaScript  
SQL, U-SQL  
Bash (Unix utils)

#### Developer Tools

CMake, QMake  
Visual Studio, Qt Creator  
CLion, Valgrind  
Git, Mercurial, SVN

#### Mathematics

Linear Algebra  
Statistics, Probability  
Calculus, Physics  
Algorithms

#### Domain-Specific

Gameplay, User Interface  
GTest, Cont. Integration  
OpenGL, Compilers  
Linux systems, ALSA

### Work Experience

#### Microsoft - Software Engineer

Jun '15 - (Current)

- Crunched large amounts of data for processing and visualization (SQL, U-SQL, KendoUI).
- Built extensions when existing tools lacked functionality (U-SQL extensions, C# applications).
- Designed, architected, and maintained several general-purpose, high-impact data streams.
- Made servicing decisions based on the results of the data sets (filed bugs, monitored releases).

### Open Source

#### OpenSK - Cross-Platform Streaming Toolkit

May '16 - (Current)

- Creating utilities using the API as it is being developed to understand impact of API design decisions.
- Became proficient with Advanced Linux Sound Architecture (ALSA), PCM streams, general sound architecture.

#### RefN - Cross-Platform C++ Reflection eNgin

Feb '16 - (Current)

- Automated reflection registration via provided tools, which allow reflection to generate pre-build.
- Supports hooking into build system to only generate reflection when changes are detected.

### School Projects

#### Karma - Modern OpenGL Framework

Jan '15 - Apr '15

- A configurable multi-pass deferred renderer with class encapsulations of the OpenGL API.
- Physically Based Rendering, Image Based Lighting, Filmic Tonemapping (via. Naughty Dog).
- Per-Fragment Motion Blur, Area Lights, SSAO, Soft Shadows, swappable BRDF subroutines.
- Published technical documents outlining implementation (<http://www.trentreed.net/topics/opengl/>).

#### Ping - 3D Perception-Based Horror

Jul '13 - Jul '14

- Wrote a reflection system that allowed deeper type-introspection of C++ classes.
- Leveraged reflection system for easy Lua interfacing (types, function, methods, C++/Lua binding).
- Created a cross-platform, type-safe, hot-swappable resource management system.

#### Demon Drum - 2D Atmospheric Puzzle

Sept '12 - Apr'13

- Created a component-based engine so that developers could work within their own systems.
- Architected the event system for easy registration of events allowing for easier code decoupling.
- Created the level parsing for quick serialization and deserialization of game scenes.

### School

#### DigiPen Institute of Technology - Redmond, WA

Aug '11-May '15

Bachelors of Science in Computer Science in Real-Time Interactive Simulation

- Magna Cum Laude, Student of the Year (2014), Dean's List (several)