

## Objective

**Secure a full time Software Engineering position**  
with a focus on Real Time Rendering and Gameplay Programming

## Education

**DigiPen Institute of Technology (2012 - April 2016 exp.)**  
BS in CS in Real-Time Interactive Simulation with a minor in Mathematics

## Qualifications

- Well-versed in modern rendering techniques including Physically Based Rendering, Deferred Rendering and numerous Non Photorealistic effects
- Effective Communicator: 3 years experience in successful and award-winning student game teams of sizes 3-12
- Familiar in C++, C, C#, HLSL/GLSL, Java along with a solid base in data structures.
- Familiar with GPU/CPU Optimization/Analysis, HTML/CSS/XML, Python, SQL, Perl, and R
- Experience using TortoiseHg/Mercurial/Git, Perforce, C++ StdLib/Boost libs, vTune, Visual Studio, Nvidia nSight, Eclipse, Sublime II
- Many years experience with the Adobe Suite and some experience with Maya

## Work Experience

### **NVIDIA - Santa Clara, CA Campus (Summer 2015)**

[Software Engineer Intern on Nvidia nSight, Nvidia's graphics debugging tool](#)

- Worked primarily in C++ on a small OpenGL/DirectX graphics engine that was integrated into Nsight for data visualization and graphics debugging
- Worked remotely with team based in North Carolina in a large codebase

### **NVIDIA - Durham, NC Campus (Summer 2014)**

[Software Engineer Intern on Nvidia Nsight](#)

- Developed tools to be used in the profiling of nSight
- Worked primarily in C++ and did some work in Perl, XML, Python and C#
- Made additions to large established projects
- Work primarily involved: C++ Code Generation, Visual Studio Project Configs, DLL Generation and Detouring, and improving usability for inhouse applications

### **Northfield Trading LP (Summer 2012)**

[Independently Contracted Software Engineer](#)

- Co-developed analytic software for outcome prediction in baseball
- Learned fundamentals of Java along with the basics of PHP, SQL and R on a Linux platform

### **Breckenridge Grand Vacations (Summer 2011)**

[Information Services Intern](#)

- Helped maintain a large network infrastructure

### **Breckenridge Grand Vacations (Summer 2009 & 2010)**

[Intern in Advertising and Graphic Design](#)

- Created advertising for print and web
- Built company website that was used for 5 years
- Heavy use of the Adobe Suite

## Other Projects

- Oculus Mobile VR Jam for Gear VR: Small vr music visualizer built in C# and Unity with control point based Bezier Spline mesh generation.
- Animation system with skinning in OpenGL & C++
- 3D Software Rasterizer built from scratch in C++ that can render simple 3D scenes with lighting
- Memory Manager: C++ Memory Management/Allocation System
- ShaderToy: Developed numerous shader toys using real time raytracing and raymarching techniques in glsl (samples available on mywebsite)
- GPU Particle demo using compute shaders
- ERRRK!: A top down endless racing game with team of 3 build from the ground up in strict ANSI C

## Student Game Projects

Acted as Graphics, Gameplay and Effects Programmer on all projects  
More information about each game is available on stanleyhayes.com

### **SubRay VR [In Development]: 2015 - Present**

[An atmospheric underwater exploration game, with a focus on survival in an alien ocean built in Unreal Engine 4 for the Oculus Rift](#)

- Worked as Graphics FX artist and Gameplay Programmer
- Developed various post process, material and particle effects specifically to invoke a sense of presence in Virtual Reality
- Created procedural animation system for eels and accompanying gameplay
- Worked closely with designers in developing and designing levels and gameplay elements for Virtual Reality

### **Dischord EP: 2014 - 2015**

[3D action game built from the ground up in C++ with custom DirectX graphics](#)

- Worked as a core Graphics, Gameplay and Effects Programmer
- Implemented Object Materialization, Mesh Deformation and other mesh effects
- Created numerous fullscreen effects in a Deferred Pipeline such as, AO, Color Correction, Edge Detection, Glow, and other gameplay specific effects
- Co-developed Various Rendering Techniques:  
Deferred Rendering, Image Based Lighting, Physically Based Rendering
- Co-created a music visualizer that links MIDI data to shader inputs
- Improved art pipeline tools and worked closely with artist to get art in game
- Created/Integrated various gameplay systems:  
3D Camera Controller, Audio/Visual/Effect Integration, Various Mechanics
- Developed by 5 core devs, 3 artists, and 12 people total

#### Awards:

- Won 1st for Best 3D Graphics Tech from DigiPen
- Won 1st for Best Music & Sound from DigiPen
- Won 2nd for Best 3D Visual Design from DigiPen

### **SubRay: 2013 - 2014**

[Award-winning 2D atmospheric survival game built from the ground up in a custom C++ engine with a custom DirectX graphics engine](#)

- Worked as a core Graphics, Gameplay and Effects programmer
- Co-developed a DirectX 10/11 Graphics Engine
- Developed numerous 2D Shader Effects including: Metaballs, Displacement Effects, Particles Effects, Glow, Image Optimization, etc.
- Co-developed 2D art pipeline and worked closely with artists'
- Gave presentations and panels at game competitions
- Screenshots featured in DigiPen advertising (online and on Redmond transit)
- Developed by 5 core devs, 2 artists, and 8 people total
- Developed Gameplay systems for the Intro/Outro, Boss fights and 2D Camera

#### Awards:

- Won the Claude Comair Game of the Year Award
- 1st place in over 7 DigiPen Awards: Best Art, AI, Visuals, Audio, Design
- Finalist in the Strasbourg European Fantastic Film Festival
- Winner at Intel Buzz Workshop Developer Showcase
- Finalist in Best Visual Quality in the Intel® University Games Showcase at GDC
- Featured in countless articles and 'Let's-Plays' throughout the web

## Extracurriculars

### **The DigiPen Graphics Club (2014 - Present)**

- Co-founded and coordinated talks by industry professionals about graphics

### **American Computer Science League (2011 - 2012)**

- Co-founded club and led team to compete in AllStar contest in Philadelphia

970.324.3379

s.hayes@digipen.edu  
stanleyhayes.com