

## Technical Skills

### Languages

- C / C++ (14/17) / C#
- SQL
- Java
- Javascript
- Python

### Software & Tools

- Unity
- Visual Studio
- IntelliJ
- SVN
- Git

### API & Libraries

- OpenGL
- GLFW
- FmodEX
- STL
- Boost

### Physics / Math

- Vector Calculus
- Linear Algebra
- Statistics/Probability
- Fuzzy Logic

### Graphics Programming

- PBR
- Deferred Shading
- GLSL Shader

## Academic Projects

### AI Programmer | Starcraft : Broodwar | <https://goo.gl/CVE3D6>

May 2017 - Present

*A custom AI bot with influence map, BWAPI, C++*

Independent Project

- Optimized the influence map system **300%** faster than former version by union and bitwise operation
- Developed object manager, build order queue, and influence map to make dynamic strategies for AI bot to implement
- Integrated 3<sup>rd</sup> party library (map analyzer) and implemented custom pathfinder for the efficient movement
- Employing Object Oriented Programming concepts such as; encapsulation, inheritance, polymorphism, and abstraction

### Graphics and Gameplay Programmer | Alaska Roll

Sep 2016 - Apr 2017

*A 3D shooter rolling a snowball, C++ Custom Engine*

5 Person Team

- Built a custom deferred shading based graphics rendering system using OpenGL which increases performance and stability
- Devised rigid body physics system with physics programmer
- Designed the rule base and programmed multiple aspects including AI and basic gameplay
- Oversaw 3 programmers with task prioritization and delegation to best meet most deadlines and milestone expectations

### Gameplay Programmer | AMAZE

Sep 2010 - Apr 2011

*A 2D puzzle shooter finding a route through the maze against the enemies, C++ Custom Engine*

7 Person Team

- Created a tool that allows designer to procedurally generate tile map without difficulty
- Constructed particle engine, text rendering systems and UI, increasing creative visual appeal in the game
- Wrote scalable gameplay components allowing designers to iterate on 3 bosses and 8 enemies across 5 levels
- Implemented the game's tutorial alongside the lead designer
- This project concluded due to mandatory military service

## Professional Experience

### Software Engineering internship | CobaltRay - Seoul, Korea

Apr 2010 - Aug 2010

- Programmed a tool that helps to sync sheet music and song easier using MFC
- Built, tested and deployed scalable, highly available and modular software products
- Developed code fixes and enhancements for inclusion in future code releases and patches
- Collaborated with product management to design, build and test systems

## Education

**Bachelor of Science** in Computer Science in Real-Time Interactive Simulation

Graduated Apr 2018

**DigiPen Institute of Technology** (Redmond, WA)

- Minor in Mathematics
- ABET, CAC Accredited Program