

Kaixiang(Kyle-sung) Miao

Education Background

- 2016.08 - 2018.05 **School of Engineering and Applied Science, University of Pennsylvania**, United States
Degree: Master of Science; Major: Computer and Information Science; GPA: 3.90
- 2012.09 - 2016.06 **School of Data and Computer Science, Sun Yat-sen University (SYSU)**, China
Degree: Bachelor of Engineering; Major: Software Engineering; GPA: 86/100

Projects (Graphics)

2016.12 **Mini Minecraft (Group project)**

- Perlin noise terrain, perlin worm caves, different biomes, skybox, weather system(snow particle, day & night cycle)
- Terrain collision, texture animation, shadow mapping, L-system river, chunk terrain rendering, inventory GUI

2016.12 **Optix Photon Mapping**

- Implemented uniform hash grids to store photons and boosted the searching efficiency
- Visualized the photons

2016.11 **WebGL Deferred Shading**

- Blinn-Phong shading model, toon shading, bloom effect, screen space motion blur
- Optimization: scissor test for point lights, reducing G-buffers

2016.10 **Mesh Editor**

- Half-edge mesh data structure, Catmull-Clark subdivision, face extruding, skeleton and skinning

2016.09 **GPU(CUDA) Rasterizer**

- Implemented Bresenham's line algorithm, normal mapping and Blinn-Phong reflection model
- Several shading methods: Flat Shading, Gouraud Shading and Phong Shading
- Perspective-correct bilinear texture mapping, back-face culling

2016.09 **GPU(CUDA) Path Tracing**

- Diffuse surface, effects of reflection and refraction (Fresnel effect)
- Used stream compaction to remove terminated rays
- Depth of field && motion blur

2015.08 **Animation Editor**

Project which is conducted during my internship and finally becomes my graduate design

- Combined Qt GUI framework with DirectX11 rendering framework
- Read data from .m3d files (format in DX11 dragon book), dealt with the bone hierarchies and the key frame interpolation
- Users are able to write a script to generate routes for the characters

2014.11 **Android Library**

- Used HttpClient to send the request of get/post, parsed HTML by JSoup, stored data on SQLite database
- Users are able to search books, query borrowing information, log in and add books to favorites

Work Experience

2015.07-2015.09 **Seasun Game Studio, Kingsoft** *Internship-Software Engineer*

- Responsible for maintaining the material editor
- Developed an interactive animation toolkit

Honors and Awards

- Silver Metal, ACM Asia Programming Guangdong Provincial Contest 2015
- Honorable Mention in 2015 Mathematical Contest in Modeling (MCM)
- First Prize, 2015 SYSU Scholarship

Programming Skills

- Proficient in C++ (Template, STL, memory management, C++11)
- Data structures and algorithms are trained well by ACM competitions
- Others: Python, C#, Java, Android SDK, Linux, Mac OS, MySQL, SQLite, Apache, Raspberry Pi, Arduino

Visit my website to see my portfolio: <http://www.miaokaixiang.com>