

Ruoyu Fan

范 若余

ruof@seas.upenn.edu

Portfolio: <http://windy.moe/portfolio>

Game engineer & designer, graphics engineer, and CG generalist.

Education

University of Pennsylvania

Philadelphia, PA GPA:3.86/4.0
Aug. 2015 - May 2017
*M.S.E. in Computer Graphics and
Game Technology*

Beihang University

Beijing, China GPA:3.56/4.0
Sep. 2011 - Jun. 2015
B.S. in Software Engineering

Skills

Programming Languages:

- Modern C++
- Python
- C#
- GLSL
- JavaScript/HTML/CSS
- Java

Platforms & Software:

- Graphics/GPU APIs:
 - Vulkan
 - WebGL
 - OpenGL
 - CUDA
- Game engines/frameworks:
 - Unreal Engine
 - Unity
 - Panda3D
 - Microsoft XNA
- 3D software:
 - Blender
 - Maya
- Version control:
 - Git/GitHub

Work Experience

University of Pennsylvania, Philadelphia, PA

May 2016 - Present

Graduate Teaching Assistant for:

- CIS-564 Game Design and Development & CIS-568 Game Design Practicum
Introduction to game design, game development, virtual reality, and augmented reality
- CIS-561 Advanced Computer Graphics
Comprehensive introduction to advanced modeling and rendering techniques
- Held in-class lectures, held office hours, graded homework submissions and exams, etc.
 - Designed homework assignments: implementing path finding in game engines and an AR paintball game, etc.

Selected Projects

Vulkan Forward+ Renderer

Group course project, December 2016

- Implemented Vulkan renderer framework from scratch using C++ 14 with design patterns/idioms such as RAII and pImpl
- Implemented tile-based light culling using computer shader, which is ~1000% faster than forward renderer under 200 lights
- Provided detailed performance analysis and received 200+ stars on GitHub

WebGL Deferred Renderer

Course project, October 2016

- Implemented Blinn-Phong shading with normal mapping, bloom post-processing effect with two-pass Gaussian blur
- Used sphere as proxy for point lights, and used inverted depth test and front-face culling as optimization, increasing frame speed to 177%

Siren's Aria

VR game, group course project, May 2016

- An 1v1 online multiplayer game prototype developed with Unreal Engine, Oculus Rift, and Leap Motion
- Implemented core gameplay, control of the ship, online multiplayer support with Blueprint and C++
 - Designed the gameplay where the player uses hand motion to control a ship to navigate the sea and fight the other ship

DragonHunt

Game, group course project, March 2016

- An asymmetric 1v1 online multiplayer game prototype with Unreal Engine
- Implemented the core gameplay and online multiplayer support with Blueprint and C++
 - Designed the game with the idea of asymmetric gameplay, where players experience different types of games

Art of Destiny

Game, personal hobby project, 2009-2010

- A 3D space shooter game, the first complete game I've made
- Designed and developed the game from scratch using C# and Microsoft XNA Game Studio
 - Implemented AI, particle effects, collision, basic physics along with the gameplay.