Hui Feng

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EDUCATION

Carnegie Mellon University **09 2021 – 05 2023**
Entertainment Technology - Master of Entertainment Technology *Pittsburgh, Pennsylvania*

Guangdong University of Technology **09 2016 – 06 2020**
Internet of Things - Bachelor of Engineering - BE *GuangZhou, Guangdong, China*

TECHNICAL SKILLS

Languages: C++, C#, Python, Unity CG, HLSL, GLSL
Developer Tools/Game Engine: Unity, Unreal, Perforce, Visual Studio, VS code,Anaconda, Pycharm
Art Tools: PhotoShop, Maya, Blender, Substance Designer

PROJECTS

Interactive snow effect with footprints and tracks | C#, Unity Shader **08 2021**

- Use PBR shading in unity Build-in pipeline and PBR textures in metallic workflow.
- Set up shader tags for two different objects and use a material with a replacement shader to record and accumulate the ground's depth in each frame.
- Set the replacement shader to update the depth map and output a Displacement Render Texture.At the same time, use a height map to control the initial height of the snow.
- Perform vertex offset and change the Normal Map of the snow material according to Displacement RT.
- To increase more model detail,perform mesh subdivision.
- video Link

Toon shader framework for character and environment | C#, Unity Shader, URP **07 2021**

- The outline option uses the normal expansion algorithm, which can set the stroke width and color, and uses the SmoothNormal algorithm to smooth the outline.
- The shadow option can choose whether to use ramp map as the shadow map. If not, use the general Toon rendering method.The shadow color, feathering value and range can be set.
- Specular options can merge normal, Metal and Smooth maps. You can choose to use the anisotropic hair Specular map or the GGX Specular for the hair rendering.The Specular range, feathering value and smoothness can be set.
- video Link

Overdraw rate analysis and debugging tool | C#, Unity Shader, OnGUI(), compute shader **11 2020**

- Perform a high-precision sampling for each camera in the scene, and use the replacement shader to normalize the sampling texture and save it as a Render Texture.
- Adopt the Parallel reduction algorithm in a compute shader to calculate the number of times each pixel is drawn which is using the parallel computing,and pass it back to C# script for the statistics of Overdraw rate.
- Use OnGUI() function to count and display some values that can represent the overdraw rate,such as single frame fillrate.

EXPERIENCE

Tencent Games **05 2021 – 08 2021**
Technical Artist *ShenZhen, Guangdong, China*

- Participate in the porting of some project code frameworks from build-in to URP pipeline.
- Realize the dynamic interactive snow effect of characters stepping on snow, mainly the realization of snow material rendering, tracks and footprints.
- Build toon shader framework for objects in the scene and character.
- Realize the rain ripples and puddle effect ,including puddles, flowing water, ripples of raindrops falling on the water surface and on a wet surface.

Kingsoft **09 2020 – 02 2021**
Technical Artist *Zhuhai, Guangdong, China*

- Research on water shading related technologies and develop offline FFT Ocean.
- Develop an analysis and debugging tool for the Overdraw rate of the mobile game.
- Use Snapdragon Profiler for mobile game reverse development and performance analysis.