Xiangming Ka

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EDUCATION

Carnegie Mellon University Pittsburgh, PA
Master of Entertainment Technology; Class of 2023 *August. 2021 – Present*

University of Electronic Science and Technology of China Chengdu, China
Bachelor of Software Engineering; GPA: 3.75/4.0 *August. 2016 – June. 2020*

Exchange Study: UC Santa Barbara Santa Barbara, CA
GPA: 3.84/4.0 *March. 2019 – June. 2019*
- **Courses**: Computer Graphics, Advanced Image Synthesis

PROFESSIONAL EXPERIENCE

Unity Technologies Shanghai, China
Technical Artist Intern *August 2020 - July 2021*
- Render Feature and Shader development
- Enterprise support for Art Assets and Rendering improvements
- Devised internal development tools

ACKNOWLEDGE SKILLS

Programming Languages: C#, C++, C, HLSL, GLSL, OpenGL, Python, Java, Swift

Technologies: Unity, Unreal, Visual Studio, Perforce, Git

DCC: Maya, Substance Painter, Substance Designer, Photoshop, Blender, Houdini

SELECTED PROJECTS

Advanced Screen-Space Subsurface Scattering and Skin Rendering Unity Technologies, Shanghai
Tech: Unity ,C#, HLSL, Substance Designer *Sept. 2020 - Dec. 2020*
- Developed a Screen-Space Subsurface Scattering Render Feature using Burley's normalized diffusion model in Unity's Universal Render Pipeline
- Implemented highly performance-optimized Compute Shader for mobile and VR platforms
- Built a user-friendly Diffusion Profile system to control the subsurface scattering

Environmental Lighting for Unity Shanghai Office RTX Demo Unity Technologies, Shanghai
Tech: Unity, HDRP, Substance Painter, Substance Designer, Maya *May. 2021 - Jul. 2021*
- Physically-Based Environmental Lighting in HDRP
- Photometry validation
- Optimized for Real-time Ray Tracing

Node-Based Shading Solution for Character Rendering Unity Technologies, Shanghai
Tech: Unity ,C#, HLSL *Mar. 2021 - Jun. 2021*
- Shader Graph extension for Character Shading–Skin, Hair, Eye, and Fabric Shading
- Built Pre-integrated Subsurface Scattering in skin shading
- Researched and implemented two types of BRDF for silk-like and cotton-like fibers, created Translucency and Anisotropic Specular in Hair and Fabric Shading

Foxel-Based Volumetric Fog Render Feature Unity Technologies, Shanghai
Tech: Unity ,C#, HLSL *Dec. 2020 - Mar. 2021*
- Designed volumetric textures as intermediate storage, and used Compute Shaders and UAVs to raymarch
- Devised multiple Denoising Algorithms to improve volumetric shadow quality, including ESM and Temporal Reprojection
- Optimized Compute Shader for parallel computing