Skye Adaire

skye@worldsbeyond.us
(334) 377-1771

I specialize in high-performance rendering, mathematical models, and geometry.

Technologies

- C++ (Advanced and Template Metaprogramming)
- Vulkan, OpenGL, and OpenGLES
- GLSL (OpenGL Shader Language)
- Android NDK (C++ and OpenGLES)
- CMake for building on macOS, Linux, and Windows
- Haskell (Novice)

Techniques

- Ray Tracing and Ray Marching
- Distance Fields, Analytic Geometry, and Implicit Geometry
- Real Analysis, Complex Analysis, and Hyperbolic Geometry
- Linear Algebra and Hypercomplex Algebra (Complex Numbers and Quaternions)
- Topology (Surfaces, Spaces, and Transformations)
- Dual Numbers and Automatic Differentiation
- Procedural Generation (Meshes, Textures, and Animation)
- Image processing

Portfolio and Open Source Software

- https://github.com/skye-adaire?tab=repositories
- https://shadertoy.com/user/skye_adaire

Experience

December 2019 - March 2020
FoVI3D, Austin, TX
Software Developer, VR Rendering
Lead developer on a government contracted project, in collaboration with Texas A&M
Developed cross platform techniques for VR motion registration and input processing
Researched high performance ray tracing techniques for holographic light-field displays

September 2018 - July 2019
Solid Edge (CAD, Siemens PLM Software), Huntsville, AL
Software Developer, 3D Part Modeling team
Maintained and integrated the geometry modeler Parasolid, and external ray tracer KeyShot
Developed user-facing commands for model manipulation

Education

August 2012 - July 2018
Auburn University, Auburn, AL
Major in Applied Discrete Mathematics
Minor in Computer Science

Presentations

- “Distance Field Modeling”, 2018, Solid Edge Modeling team, Huntsville AL
- “Template Metaprogramming”, 2018, Solid Edge Modeling team, Huntsville AL
- “Bent: a glance at hyperbolic space”, 2019, Apple Maps team, San Jose CA
- “Algebraic Modeling”, 2019, nTopology, NY (Slides available on github)
- “Algebraic Expressions”, 2020, colleagues via Zoom