Skye Adaire

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

Experience

    December 2019 - April 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