Kyle Fung

Email: kyle_fung@outlook.com   Website: kylefung.github.io

TECHNICAL SKILLS
Languages: C/C++, Java, Python, JavaScript   **Tools:** Git, GDB, Visual Studio, Valgrind
API/Platforms: OpenGL, DirectX, CUDA   **Interests:** Computer Graphics

WORK EXPERIENCE
SideFX Software – *3D Software Developer intern (C++)*   *September 2017 – December 2017*
  - Contributed rendering code to Houdini, a 3D animation application and Mantra, its renderer
  - Added direct rendering of subdivision surfaces to Mantra using OpenSubdiv
  - Made new vector data types to leverage AVX SIMD intrinsics for x86 platforms
  - Implemented several variations of Voronoi noise for terrain and texture generation
  - Optimized a bottleneck routine using multithreading and efficient use of OpenVDB data structures

LinkedIn Corporation – *Infrastructure Developer intern (Java)*   *August 2016 – December 2016*
  - Contributed to Azkaban, an open source Hadoop job scheduler
  - Integrated Azkaban's logging system with Elasticsearch to enable searchable logs
  - Fixed issues with parsing and handling server requests and responses
  - Maintained and deployed LinkedIn's Azkaban clusters for internal and production uses

Mozilla Corporation – *Graphics engineering intern (C++)*   *May 2015 – August 2015*
  - Contributed rendering code to Firefox, an open source web browser
  - Fixed conformance issues in the behavior of Firefox's WebGL implementation
  - Added WARP device support for WebGL using ANGLE
  - Debugged and fixed general rendering issues in Firefox

TransGaming Inc. – *Graphics programming intern (C++)*   *August 2014 – December 2014*
  - Wrote over 70 HLSL shader programs to test sanity of an HLSL to GLSL compiler
  - Set up more than 1000 rendering tests using the OpenGL ES2 conformance suite

PERSONAL PROJECTS
Jiggle – *(C++, OpenGL, Eigen)*
  - An interactive 3D demo of non-rigid body physics with continuous collision detection
  - Wrote a semi-implicit Euler method (Baraff and Witkin) for dynamics of mass-springs
  - Implemented oct-trees to accelerate intersection tests via bounding volume hierarchies

ShallowWater – *(JavaScript, WebGL)*
  - An interactive 3D demo displaying and simulating moving water created with a friend
  - Uses ray tracing in GLSL shaders to implement refraction, caustics, and lighting

FluidCanvas – *(JavaScript)*
  - An interactive 2D liquid and smoke simulator based on numerical techniques
  - Solves the Navier-Stokes equations using a Jacobi solver, with solid wall boundary conditions

WasteEngine – *(C++, OpenGL)*
  - A toy 3D rendering engine that supports loading of meshes and textures

EDUCATION
Undergraduate – Computer Science at University of Waterloo   *September 2013 – present*
  - 90.5% major average (Computer Science) and 88.0% cumulative average

Research – Undergraduate research assistant   *January 2016 – April 2016*
  - Studied fluid simulation and rendering part-time with Dr. Christopher Batty during the school term