Kyle Fung

University of Waterloo Computer Science 3B
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TECHNICAL SKILLS

Languages: C/C++, Java, CUDA C, HLSL, GLSL
Tools: Bash, GDB, Visual Studio, APITrace, Git, Mercurial
API/Platforms: OpenGL, DirectX, CUDA
Domains: Computer graphics, Compilers

WORK EXPERIENCE

University of Waterloo – Undergraduate research assistant *January 2016 – present*
- Studied computational fluid dynamics under Dr. Christopher Batty during the school term
- Learned state of the art solutions and techniques through reading academic papers and internet research
- Engineered and implemented a 2D interactive real-time fluid simulator

Mozilla Corporation – Graphics engineering intern *May 2015 – August 2015*
- Regularly debugged, wrote and maintained C++ over a massive code base
- Fixed conformance issues in the behavior of Firefox's WebGL implementation
- Added WARP device support for WebGL using ANGLE
- Started upgrade of test infrastructure to use WebGL conformance test suite version 1.0.3
- Diagnosed and fixed rendering issues with Firefox on Windows

TransGaming Inc. – Graphics and portability developer *August 2014 - December 2014*
- Debugged large C++ applications to diagnose rendering issues
- Set up more than 1000 rendering tests using the OpenGL ES2 conformance suite, rendered using ANGLE
- Wrote over 70 HLSL shader programs to test sanity of an HLSL to GLSL compiler

IBM Canada – Infrastructure developer *January 2014 - April 2014*
- Maintained an automated testing system over a network of 50 servers for IBM's JIT compiler team

PERSONAL PROJECTS

WasteEngine (github.com/KyleFung/wasteEngine)
- A toy rendering engine using OpenGL, written in C++, supporting lighting and custom shaders
- Implemented basic model loading with Assimp and texture loading with ImageMagick

FluidCanvas (github.com/KyleFung/fluidCanvas)
- An interactive liquid and smoke simulator based on numerical techniques, written in Javascript

Recursive Ray Tracer (github.com/KyleFung/RayTracer)
- An offline ray tracing renderer to accurately display 3D scenes using Blinn-Phong lighting, in C++

Voxel Renderer (github.com/KyleFung/smokeBox)
- A precursor to an implementation of the marching cubes algorithm, written in C++, CUDA C, and OpenGL

RELEVENT COURSES

Computer Graphics (Online course on edX)
Object-Oriented Software Development (CS246)
Numerical Computation (CS370)
Automata Theory (Online course on Coursera)
Operating Systems (CS350)
Algorithms (CS341)