Francois M. Demoullin

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Education

University of British Columbia *Vancouver, BC*

M.A.Sc. in Computer Engineering, Supervisor: Dr. Tor Aamodt *Sep. 2017 - Present*

- Funded Research Assistant - Computer Architecture lab
- Current Research project: Graphics pipeline hardware simulator for embedded SoC - funding provided by Google
- Other research interests: Computer Vision hardware accelerators: CNN accelerators for depth perception

B.Sc. in Computer Science, GPA: 4.10 *Sep. 2013 - Jun. 2017*

- Dean's list of honour 2013/14 and 2014/15
- Teaching assistant at the Department of Computer Science

Experience

Activision Blizzard - Central Technologies *Portland, ME*

Software Engineering Intern *May. 2017 - Aug. 2017*

- Credited on AAA game: Call of Duty World War 2
- Low level CPU & GPU performance optimization for the rendering engine using C++ and HLSL
- CPU + GPU profiling tools: PIX, PS4 Razor, VTune, Nsight

Magic Leap *Mountain View, CA*

Embedded Software Engineering Intern *Jun. 2016 - Aug. 2016*

- Implementation of dense mapping Computer Vision algorithms on embedded device using C++

GPGPU lab, UC Davis *Davis, CA*

Undergraduate Researcher, Supervisor: Dr. John Owens *Sep. 2015 - Jun. 2016*

- Wrote OpenGL applications for testing and demonstration of Kerry Seitz's (PhD candidate) meta-shading pipeline using Lua
- Poster at HPC 2017: Selos: Staged Metaprogramming for Shader System Development by Kerry A. Seitz, Jr., Tim Foley, John D. Owens

Network Research Group, UC Davis *Davis, CA*

Undergraduate Researcher, Supervisor: Dr. Norm Matloff *Sep. 2015 - Jun. 2016*

- Implementation of multi-threaded Python Server using TCP as the network protocol

Ville de Luxembourg (city government) *Luxembourg, Luxembourg*

Software Engineering Intern *Jul. 2014*

- Implementation of recruitment web-application using Java and ZK framework

BNP Paribas (4th largest bank worldwide) *Luxembourg, Luxembourg*

Software Architecture Intern *Jun. 2015*

- Studied large scale log management solution in banking sector
- Proposed solution: centralized database for log collection with heightened security over current solution
- Outcome: Significant reduction in bug detection time and increased client data security

Projects

Volume Renderer / Volumetric Ray Caster

- 3D Volume visualization tool using tri-linear or tri-cubic interpolation methods to render volumetric data sets used in medical imaging
- Custom rendering engine written in C++, OpenGL, GLSL
- presentation: here, source code: here

GPU accelerated Particle System

- Parallelized graphical application using GPU accelerated compute shaders to support the rendering of up to 1mio. particles at 60fps
- Custom rendering engine written in C++, OpenGL, GLSL
- source code: here

Skills

Programming languages: C++, C, CUDA, Verilog, Python, GLSL/HLSL, OpenGL

Languages: English, French, German, Luxembourgish, Spanish