

Adrian Saldanha

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EDUCATION

UNIVERSITY OF WATERLOO

BACHELOR OF MATH

Graduated October 2015 | Waterloo, ON

HOLY TRINITY CATHOLIC

Graduated June 2009 | Oakville, ON

COURSEWORK

UNDERGRADUATE

Programming Languages

Operating Systems

Artificial Intelligence

Concurrent and Parallel Programming

Digital Hardware

Computer Networks

SKILLS

PROGRAMMING

Very Familiar Technologies:

OpenGL • Linux • Windows • Houdini

Over 65000 lines:

C++

Over 5000 lines:

C • C# • Java • Shell • JavaScript • Python

• PHP • GLSL • Haskell

Over 1000 lines:

• CUDA • OpenCL • CSS • PHP • ASP

Familiar:

Maya • Unity 3D • SDL • Android • Mac

OS X • Matlab • Octave • Bootstrap • Flask

• Vue.js • XAML/WPF

OTHER

Hobbies

Piano • Guitar • Jazz • Calisthenics

OTHER PROJECTS

Web

profitable game fansite • myronstone.ca

• webstersonline.com features

Artificial Intelligence

Chess AI

Games and Graphics

Tetris, Snake, Pong clones • Incomplete 3D

racing simulator • Realtime CPU Raytracer

Misc

Project Euler • Procedural tree generator

EXPERIENCE

BENTHAM INSIGHT | Co-FOUNDER, CO

One year and one month of experience

Jan 2019 - Present | Toronto, ON

- Co-founded Bentham Insight with a corporate lawyer. Bentham Insight is an organization dedicated to providing legal analysis of M&A contracts.
- Wrote software used by lawyers to train **Bentham**, the AI which will be responsible for the analysis using a supervised NLP ML algorithm.
- Developed business plans and strategies which will ultimately bring Bentham to the market.

TELEDYNE OPTech | SOFTWARE DEVELOPER

One year and one month of experience

May 2017 - Jul 2018 | Toronto, ON

- Helped develop **Lidar Mapping Suite**, a software used in tandem with airborne and terrestrial Lidar instruments to compute the final georeferenced survey result, perform analysis on the survey, and to perform post-calibration.
- Worked along-side researchers to improve the accuracy and precision of Lidar instruments using software to perform mathematical analyses of the instruments.
- Developed and improved in-flight software, support software, and calibration software.

SULON TECHNOLOGIES | COMPUTER SCIENTIST

Six months experience

October 2015 - March 2016 | Toronto, ON

- Worked on the AMD-powered **Sulon Q**—an augmented virtual reality headset as a member of the computer vision team developing software
- Researched and implemented computer vision SLAM algorithms for the GPU using CUDA and OpenCL intended for the headset, namely stereo vision and real-time mapping.
- Received and provided feedback to the hardware team with respect to the design, technical specifications and appearance of the headset
- Wrote software to visualize the output of simultaneous localization and mapping algorithms

SIDE EFFECTS SOFTWARE | 3D SOFTWARE DEVELOPER CO-OP

Two years total experience

May 2010 - December 2013 | Toronto, ON

- Worked on the **Houdini Engine**, a C interface to a Houdini animation. Worked on plugins to **Maya** and **Unity 3D** which used this interface. Wrote features directly for clients such as **Guerilla Games Inc.**
- Worked on **OpenVDB** — a sparse voxel data-structure — remotely with **Dreamworks Interactive**. Integrated OpenVDB into Houdini and provided feedback for the core library.
- Helped release **Houdini 12** by completing the OpenGL 2 viewport. Implemented stencil routed transparency effects in OpenGL 3, as well as reflection and refraction effects.
- Worked on **Houdini 11**: Performed a developer contract with **Pixar** for viewport particle features. Rewrote core parts of the 3D viewport to be compatible with OpenGL 3

- Worked on **Houdini 10.5**: Completely rewrote the particle / sprite view, rewrote the viewport volumetrics renderer, and overhauled the usability of the render region.

RUNESCAPE FAN-SITE | WEBMASTER

Three years and five months experience

Jan 2005 - May 2008 | Oakville, ON

- Designed, developed, maintained, administered, and promoted a profitable game guide site, in addition to an application which helped gamers play the game.

SIDE PROJECTS

FLUID SIMULATOR | C++ FLUID SIMULATOR

Presently | Toronto, ON

Currently leading a small team developing a fluid simulator, our first goal is a 3D simulation based on the SPH algorithm. Our plan is to eventually implement a more robust solution which will ultimately be ported to the GPU as well.

MONTE CARLO PATH TRACER | HASKELL PATH TRACER

Presently | Toronto, ON

Wrote an unbiased bi-directional path tracer with a simple interface. Based on the original Veach thesis, with a Cook-Torrance based BSDF and many standard features. An initial GPU version has been written in OpenCL with almost realtime results for simple scenes.

RAYTRACER | C FAST RAYTRACER

September 2008 - August 2009 | Oakville, ON

During High School, constructed a raytracer able to trace simply shaded static scenes in real time using SIMD on the CPU. Supported features were ambient occlusion, many types of lights, refraction. Uses heuristically (SAH) constructed kd-trees.

GRAPHICS ENGINE | C++ TOY GRAPHICS ENGINE

September 2008 - August 2009 | Oakville, ON

Very complete graphics engine with a deferred OpenGL shading system. Supports SSAO, variance cascaded shadow maps and large numbers of real-time lights.