

Troy Lawlor

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cell: (web resumé)

Profile

Life-long programmer and recent graduate looking for a challenging job with a healthy dose of math and polygons. Vectors, quaternions, shaders, neural networks, threads, physics engines: these are my life-blood.

Education

University of Alaska Fairbanks

2003-2007

Bachelor of Science in Computer Science

Bachelor of Science in Mathematics

Two degrees, four years, 3.76 Cumulative GPA

Outstanding Undergraduate of the Year in Computer Science 2006-2007

Outstanding Undergraduate of the Year in Mathematics 2006-2007

Meritorious rating in 2006 COMAP Mathematical Contest in Modeling

Experience

NorthWest Research Associates, inc. ~ Bellevue, WA

2002-2006

Student Programming Intern at the **High Frequency Active Auroral Research Project** (HAARP), a world-class ionospheric research station located in Gakona, Alaska. Wrote software in a variety of languages for several operating systems and scientific instruments. Projects were specified, supervised, and used by atmospheric scientists from around the world.

- Designed and implemented a complete software platform for the HAARP spectrum monitor. Platform included a C++ application to drive the spectrum analyzer with precise timing, as well as CGI scripts to allow web visitors to easily browse data. Running crash-free since August 2006.
- Multithreaded C++ and Python software to automate an all-sky photometer, responsible for adjusting exposure times, switching filters, and taking pictures based on a parsed schedule during night-long experiments.
- C++ software to drive a motorized photometer platform, automatically rotating to track stars during night-long experiments.
- A web-based Java keogram browser capable of organizing and enhancing images with an easy-to-use interface.
- CGI Perl data browser for the Advanced Modular Incoherent Scatter Radar (AMISR).

Skills & Interests

- C++ used professionally for 5 years. Perfectly comfortable with patterns, templates, and multiple inheritance.
- Computer graphics expert. See my web page for demos with large-scale terrain, interactive water, several shadow techniques, procedural trees, skies with realistic atmospheric scattering, and much more.
- Cross-platform programming expert. Equally comfortable with Mac OS X, Windows, and Linux.
- Strong mathematics background. Differential equations, linear algebra, and complex analysis are old friends.
- Wrote a cross-platform game engine with physics engine integration, 3-D audio, A.I., and an editor. Details on web page.