

Eric Lavigne

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Professional Experience

- **Software consultant**

- *HSW Technologies, LLC* *Sept 2007 - Present*
 - Providing support for software that I co-developed as a graduate student (ASEDRA and ACHIP) and adapting that software for the needs of new customers.
 - Principal developer of additional software that helps with calibration of ASEDRA for new detectors.

- **Computer application developer**

- *University of Florida - Bureau of Economic and Business Research* *Aug 2007 - Present*
 - Principal developer of a module that tracks the budget for a survey research center.
 - Principal developer of a module that helps supervisors to evaluate interviewer performance on phone calls (work in progress).

- **Graduate assistant**

- *University of Florida - Dept. of Nuclear & Radiological Engineering* *Aug 2004 - Aug 2007*
 - Principal developer of a program based on chi-squared analysis (ACHIP) that reduces stochastic noise in radiation measurements.
 - Co-developer of a program for separating overlapping signals and identifying special nuclear materials (ASEDRA). Created a graphical interface for ease-of-use.
 - Teaching assistant of a math and programming course for nuclear engineering students.

- **Substitute teacher**

- *Brevard County Public School System* *Jan - May 2004*
 - Taught junior high and high school classes.

- **Mathematical technician**

- *Science Applications International Corporation* *July - Aug 2002*
 - Improved both the consistency and the scope of the Air Force's distance algorithm by treating five special cases as examples of a general pattern.
 - Debugged an incomplete prototype of the distance algorithm in collaboration with another programmer at Computer Science Innovations Incorporated.
 - My team designed and performed quality assurance tests for the distance algorithm.

- **Scientific programmer**

- *Air Force Technical Applications Center* *July - Dec 2001*
 - Created the first complete prototype of the distance algorithm, based on a declassified specification document provided by the Air Force Technical Applications Center.
 - Air Force officers approved my code because it matched the specification.
 - Engineers at Computer Science Innovations approved my code because it was clear, well documented, and provided as a library with usage examples.

Education

- **M.S. in Nuclear Engineering Sciences**

- *University of Florida* *Aug 2004 - Aug 2007*

- **B.S. in Mathematics (Physics minor)**

- *University of Florida* *Aug 1999 - June 2003*

Awards

- **Sun Certified Java Programmer**
Demonstrated proficiency in the Java programming language. Mar 2007
- **Best of Radiation Protection and Shielding Conference**
One of nine recognized presenters at a national conference. Apr 2006
- **Fastest Codeslinger** <http://www.gatorlug.org/node/16>
Won the Gainesville Linux User Group's speedcoding contest. Feb 2006

Open Source Contributions

- **Fortress: scientific programming language** Jan 2007
<http://www.experimentalstuff.com/pipermail/fortress-interest/2007-January/thread.html>
– Submitted bug reports for an early prototype.
- **Erlisp: Erlang-style concurrency library for Common Lisp** July - Aug 2005
<http://common-lisp.net/pipermail/erlisp-devel/2005-July/thread.html>
– Added support for Allegro and Carnegie Mellon compilers.
- **Computer Language Shootout** June 2005
http://groups.google.com/group/comp.lang.lisp/browse_frm/thread/b6997bc762f9b22a
– Worked with Dr. Neuss, submitting a Lisp program for one of the Shootout benchmarks.
- **Torque Game Engine** Dec 2004
<http://www.garagegames.com/index.php?sec=mg&mod=resource&page=view&qid=6899>
– Contributed a patch that allowed projectiles to follow the terrain at a fixed altitude.
- **Portability Library (PLIB)** Jan - Aug 2004
– Submitted several patches on behalf of developers who did not have CVS access.

Publications

- Sjoden and Lavigne, *Foundations in Applied Nuclear Engineering Analysis*. World Scientific Publishing. Work in progress, expected completion December 2008.
- Lavigne, Sjoden, Baciak, and Detwiler, "Extraordinary improvement in scintillation detectors via post-processing with ASEDRA – solution to a 50-year-old problem," *Proceedings of SPIE: Defense and Security Symposium*, Vol. 6954, Orlando, Florida, April 2008.
- Detwiler, Sjoden, Baciak, and Lavigne, "Improved Plutonium Identification and Characterization Results with a NaI(Tl) Detector using ASEDRA," *Proceedings of SPIE: Defense and Security Symposium*, Vol. 6945, Orlando, Florida, April 2008.
- Lavigne, Sjoden, and Baciak, "Advanced Synthetically Enhanced Detector Resolution Algorithm (ASEDRA): A System for Extracting Photopeaks from a NaI Scintillation Detector Spectrum," *M.S. thesis*. August 2007.
- Lavigne, Sjoden, and Baciak, "A method for stochastic noise reduction by chi-squared analysis," Best of RPSD 2006, *Proceedings of the American Nuclear Society 2006 Winter Meeting and Technology Expo*, Albuquerque, New Mexico, November 2006.
- Lavigne, Sjoden, and Baciak, "Chi-square based selective data smoothing for detector spectra," *Proceedings of RPSD 2006: American Nuclear Society Topical Meeting in Radiation Protection and Shielding*, Carlsbad, New Mexico, April 2006.
- Lavigne, "The Marble Go Board," *American Go Yearbook*, p 24, American Go Association, June 2004.