

Elijah Newren

Education

- Doctor of Philosophy in Mathematics, University of Utah, expected Dec. 2006, 4.00 GPA
- Master of Science in Mathematics, University of Utah, Dec. 1998, 3.98 GPA
- Bachelor of Science in Mathematics, University of Utah, Mar. 1998, 3.90 GPA, Cum Laude

Awards and Honors

- Department of Energy Computational Science Graduate Fellowship, Sep. 2001–Aug. 2005
- NSF Research Training Grant, FRG Research Assistantship grant, Aug. 2005–present
- Graduate Certificate in CES (Computational Engineering and Science)

Summary

- Strong knowledge of programming languages, methods, and algorithms.
- Ability to communicate well both orally and in written form.
- Highly interdisciplinary as reflected in coursework, awards, and open source involvement.

Computer Skills

- Languages
C++ (including Object Oriented Programming, Design Patterns, Templates, etc.), C, Matlab, shell scripting (bash, tcsh), Python, Perl, Fortran, AWK, SQL, x86 assembly, Pascal.
Plus minor familiarity with M4, Tcl/Tk, Scheme, Basic, Emacs Lisp, Java, Sparc Assembly.
- Libraries/Packages:
 - Version Control Systems
cvs, arch (tla/baz), bazaar, subversion, git
 - Debuggers/Debugging/Profiling
Totalview, gdb, strace, valgrind, gprof, oprofile, electric fence, sysprof
 - Graphical User Interfaces
GTK+, libglade, GConf, and other Gnome libraries (including C, C++, Python, and Perl language bindings for these libraries)
 - Parallel Programming & Scientific Libraries/Frameworks
VTK (Visualization ToolKit), MPI (message passing on distributed architectures), PETSc, SAMRAI, LAPACK, ARPACK, SLEPC, FFTW
 - Others
Bugzilla, Matlab, Maple, LaTeX, Docbook, emacs, Bonsai/LXR/Viewcvs, bison, flex, the standard suite of unix utilities (patch, diff, grep, find, locate, xargs, rsync, etc., etc.)
- Architectures
IBM SP2, Cray T3E, Linux Clusters with Myrinet, SGI Power Challenge, Workstations and PC's; various flavors of Unix and Linux

Volunteer Work: Involvement in GNOME

- Release Team Manager, Aug. 2005–Present; Release Team Member, Aug. 2004–Present
 - Managed software releases comprising about 3.5 million lines of code, 120 subprojects, and hundreds of developers (including employees of several companies as well as many volunteers)
 - Streamlined and further documented the release process
 - Pushed towards consensus on divisive issues
- Co-Maintainer of Metacity, Libwnck, and Gnome Bugzilla
 - Fixed hundreds of bugs, implemented new features, made releases, added documentation
 - Redesigned inherently problematic portions of the code base
 - Worked to get more people involved in these projects
- Contributed fixes to over a dozen other subprojects
- Wrote a tutorial on Gnome development that was adopted by the “Gnome Love” project (whose goal is to try to get new contributors involved in Gnome)
- Member of Quality Assurance (“bugsquad”) team

Experience

Graduate Research Fellow, University of Utah, Sep. 2001–Present

- Solved a long-standing (decades old) algorithmic issue with a method for handling fluid dynamic problems that involve (deformable) interacting structures

Intern, Lawrence Livermore National Laboratories, Fall 2002

Intern, Los Alamos National Laboratories, Summer 2001

- Extended large scientific framework software packages

Teaching Fellowship, Mathematics Department at University of Utah, Aug. 2000–May 2001

Teaching Assistantship, Mathematics Department at University of Utah, Sep. 1997–Aug. 1998

- Taught mathematics courses (responsible for all aspects of the classes).

Intern, Supercomputing Institute at University of Minnesota, Summer 1997

- Optimized a physics code simulating TPA experiments.

Consultant, Center for High Performance Computing at University of Utah, Dec. 1996–Sep. 1997

- Answered user questions about high performance machines

Other

- Volunteer Church Representative, Aug. 1998–Aug. 2000; selected to supervise 8 fellow representatives
- Great memory—memorized Pi to 960 places in 9th grade