

Eric Schulte | Curriculum Vitae

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Education

University of New Mexico

Ph.D., Computer Science

Advisor Stephanie Forrest

Thesis Evolution of Extant Software

Albuquerque, NM

2009 – 2014 (expected)

Kenyon College

B.A., Mathematics, Minor Philosophy

Gambier, OH

2000 – 2004

Budapest Semester in Mathematics

Coursework in Combinatorics and Abstract Mathematics

Budapest, Hungary

2003

Academic and Professional Experience

University of New Mexico

Research Assistant

- Developed genetic techniques for software development and optimization.
- Investigated biological properties of software.

Albuquerque, NM

2009 – Present

Free Software Foundation

Google Summer of Code Mentor

2012

- Advised an undergraduate software developer developing Emacs extensions.

Counsyl

Open Source Software Consultant

- Consultation and development applying open-source software to the technical demands of a bio-technology startup.

Palo Alto, CA

2010 – 2011

The MITRE Corporation

Senior Artificial Intelligence Engineer

McLean, VA / Seattle, WA

2005 – 2009

- Lead developer for a research effort that automated query formulation for news analysts. Included the creation of a portable web based experimentation and evaluation platform.
- Lead developer of the RAMBO (Rapid Argus Modeling for Biosurveillance Operations) system for the Argus project in disease modeling and surveillance. RAMBO was a web application used to produce, execute, and distribute the results of Bayesian models running over text media collected from across the Internet. RAMBO was used by roughly 50 news analysts at Georgetown University tracking emerging epidemics.
- Conceived and developed working prototype for the STAT (Statistical Tracking and Analysis of Text) text mining system. STAT performs temporal analysis of multilingual text media, providing daily updates, automated alerts, and theme identification and tracking for news analysts.
- Presented research proposals in funding competitions, led training sessions, Unix/Linux Sysadmin.

International Technical Analyst

2004–2005

- Research assistant, composed documentation and user's manuals.

Research Interests

Software engineering and computer architecture, including the use of evolutionary techniques to repair bugs and optimize extant software through modification of program source code, assembly code, and object code.

Honors & Awards

Intelligence Community Medallion: for work supporting project Argus

SPOT Technical Achievement Award: for research and development on project Argus

Publications

Refereed Conference Publications

Eric Schulte, Jonathan Dorn, Stephen Harding, Stephanie Forrest, and Westley Weimer. Post-compiler software optimization for reducing energy. In *Proceedings of the eighteenth international conference on Architectural Support for Programming Languages and Operating Systems*, ASPLOS '14. ACM, 2014, *Acceptance Rate: 22.6%*. To appear.

Eric Schulte, Jonathan DiLorenzo, Westley Weimer, and Stephanie Forrest. Automated repair of binary and assembly programs for cooperating embedded devices. In *Proceedings of the eighteenth international conference on Architectural Support for Programming Languages and Operating Systems*, ASPLOS '13. ACM, 2013, *Acceptance Rate: 22.8%*.

Eric Schulte, Stephanie Forrest, and Westley Weimer. Automated program repair through the evolution of assembly code. In *Proceedings of the IEEE/ACM international conference on Automated software engineering*, ASE '10, pages 313–316, New York, NY, USA, 2010. ACM, *Acceptance Rate: 17.8%*.

Refereed Journal Articles

Eric Schulte, Westley Weimer, and Stephanie Forrest. Repairing security vulnerabilities in the netgear router binary. Submitted, December 2013.

Eric Schulte, Zachary. Fry, Ethan Fast, Westley Weimer, and Stephanie Forrest. Software mutational robustness. *Genetic Programming and Evolvable Machines*, pages 1–32, 2013, *Impact Factor: 1.333*.

Eric Schulte, Dan Davison, Thomas Dye, and Carsten Dominik. A multi-language computing environment for literate programming and reproducible research. *Journal of Statistical Software*, 46(3):1–24, 1 2012, *Impact Factor: 4.910*.

Paul Lehner, Charles Worrell, Chrissy Vu, Janet Mittel, Stephen Snyder, Eric Schulte, and Warren Greiff. An application of document filtering in an operational system. *Information Processing & Management*, 46(5):611–627, 2010, *Impact Factor: 0.817*.

Magazine Articles

Eric Schulte and Dan Davison. Active document with org-mode. *Computing in Science & Engineering*, 13(3):66–73, May/June 2011, *Impact Factor: 1.72*.

Technical Reports

Eric Schulte and David Ackley. Physical evolutionary computation. Technical report, University of New Mexico, Albuquerque, NM, USA, 2011.

References

Contact information available upon request.

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Westley Weimer

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