

Lorin Hochstein

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Research Interests

Software engineering, with a focus on applying empirical methods to evaluate software technologies.

Education

University of Maryland, College Park

Ph.D., Computer Science, Summer 2006 (expected)

Boston University

M.S., Electrical Engineering, May 2002.

McGill University (Montreal, Canada)

B.Eng., Computer Engineering, May 1999.

Professional and Research Experience

Graduate Research Assistant at University of Maryland, Sept. 2002 – present

Designed and ran classroom experiments to study the effect of parallel programming model on programming effort and program performance. Developed instrumentation software and algorithms for estimating effort by combining reported effort with data collected automatically from development environment. Designed and ran observational studies. Collected community beliefs (“folklore”) about software issues through focus groups, surveys, and interviews. Performed case studies of large-scale high-performance computing projects. Supervised undergraduate students on projects.

Graduate Research Assistant at Boston University, Sept. 2000 – May 2002

Studied how EMG signals could be decomposed into component motor unit action potential trains, to support biomedical engineering research. Worked on a system in C++ to implement decomposition algorithms.

Software Developer at Xiphos Technologies (Montreal, Canada), May 1999 – Aug 2000

Designed and implemented cross-platform virtual private network software in C++ using CORBA. Ported legacy codes from Linux to Windows NT.

Summer Intern, Matrox Graphics (Montreal, Canada), May 1998–Aug 1998

Developed an OpenGL test suite under Windows NT to automate the testing of video card drivers. Developed scripting language for batch testing.

Teaching Experience

Teaching Assistant, Signals & Systems I, II (ECSE 301,302), Fall 1998, Spring 1999
Conducted tutorial sessions, end-of-semester review sessions, held office hours, graded exams.

Journal Publications

Lorin Hochstein, Mikael Lindvall. "Combating architectural degeneration: A Survey." *Information & Software Technology*. July 2005.

Mikael Lindvall, Ioana Rus, Forrest Shull, Marvin V. Zelkowitz, Paolo Donzelli, Atif Memon, Victor R. Basili, Patricia Costa, Roseanne Tvedt, Lorin Hochstein, Sima Asgari, Chris Ackermann, Daniel Pech. "An Evolutionary Testbed for Software Technology Evaluation." *NASA Journal of Innovations in Systems and Software Engineering*. April 2005.

Conference Publications

Lorin Hochstein, Jeff Carver, Forrest Shull, Sima Asgari, Victor R. Basili, Jeffrey K. Hollingsworth, Marvin V. Zelkowitz. "Parallel Programmer Productivity: A Case Study of Novice Parallel Programmers." *International Conference for High Performance Computing, Networking and Storage (SC'05)*. November 2005. **Best student paper award.**

Forrest Shull, Victor R. Basili, Jeff Carver, Lorin Hochstein. "Empirical study design in the area of High-Performance Computing (HPC)." *4th International Symposium on Empirical Software Engineering (ISESE '05)*. November 2005.

Lorin Hochstein, Victor R. Basili, Marvin V. Zelkowitz, Jeffrey K. Hollingsworth, Jeff Carver. "Combining self-reported and automatic data to improve effort measurement." *Joint 10th European Software Engineering Conference and 13th ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE'05)*. September 2005.

Marvin V. Zelkowitz, Victor R. Basili, Sima Asgari, Lorin Hochstein, Jeffrey K. Hollingsworth, Taiga Nakamura. "Measuring Productivity on High Performance Computers." *11th IEEE International Software Metrics Symposium*. September 2005.

S. Hamid Nawab, Robert P. Wotiz, Lorin M. Hochstein, Carlos J. De Luca. "Next-Generation Decomposition of Multi-channel EMG Signals." *Proceedings of the 24th Annual Conference and the Annual Fall Meeting of the Biomedical Engineering Society*. October 2002.

Lorin Hochstein, Sorin Lerner, James Clark, Jeremy Cooperstock. "Soccer-Swarm: A Graphical Framework for Soccer-Player Design." *Proceedings of the International Symposium on Robotics, Montreal, Canada*. May 2000.

Workshop Publications

Sima Asgari, Lorin Hochstein, Victor R. Basili, Jeff Carver, Jeffrey K. Hollingsworth, Forrest Shull. "Generating Testable Hypotheses from Tacit Knowledge for High Productivity Computing." *Workshop on Software Engineering for High Performance Computing Applications (SE-HPCS)*, ICSE, St. Louis, MO. May 2005.

Andy Funk, Lorin Hochstein, Victor R. Basili, Jeremy Kepner. "Application of a Development Time Productivity Metric to Parallel Software Development." *Workshop on Software Engineering for High Performance Computing Applications (SE-HPCS)*, ICSE, St. Louis, MO. May 2005.

Robert Numrich, Lorin Hochstein, Victor R. Basili. "A Metric Space for Productivity Measurement in Software Development." *Workshop on Software Engineering for High Performance Computing Applications (SE-HPCS)*, ICSE, St. Louis, MO. May 2005.

Sima Asgari, Victor R. Basili, Jeff Carver, Lorin Hochstein, Jeffrey K. Hollingsworth, Forrest Shull, Marvin V. Zelkowitz. "Challenges in Measuring HPCS Learner Productivity in an Age of Ubiquitous Computing." *Workshop on Software Engineering for High Performance Computing Applications (SE-HPCS)*, ICSE, Edinburgh, Scotland. May 2004.

Jeff Carver, Sima Asgari, Victor R. Basili, Lorin Hochstein, Jeffrey K. Hollingsworth, Forrest Shull, Marvin V. Zelkowitz. "Studying Code Development for High Performance Computing: The HPCS Program." *Workshop on Software Engineering for High Performance Computing Applications (SE-HPCS)*, ICSE, Edinburgh, Scotland. May 2004.

Sima Asgari, Victor R. Basili, Patricia Costa, Paolo Donzelli, Lorin Hochstein, Mikael Lindvall, Ioana Rus, Forrest Shull, Roseanne Tvedt, Marvin V. Zelkowitz. "Empirical-based Estimation of the Effect on Software Dependability of a Technique for Architecture Conformance Verification." *Workshop on Architecting Dependable Systems*, ICSE, Edinburgh, Scotland. May 2004.

Lorin Hochstein, Mikael Lindvall. "Diagnosing Architectural Degeneration." *Proceedings of the 28th NASA/IEEE Software Engineering Workshop*, Greenbelt, MD. December 2003.

Invited Talks

CIS SIGHPC seminar at University of Delaware, Oct. 2005.

Presented "Using Empirical Studies to Understand the Impact of Parallel Programming Model on Productivity."

Awards and Honors

- Best Student Paper Award, SC'05
- Doctoral Research Scholarship, Quebec Science and Technology Research Fund (FQRNT), 2004
- Fraunhofer Graduate Research Assistantship, University of Maryland, 2002.
- Presidential University Graduate Fellowship, Boston University, 2000.
- British Association Medal for Great Distinction, McGill University, 1999.
- Outstanding Leadership Contribution Award, Electrical and Computer Engineering, McGill University, 1999.
- J.W. McConnell Award, McGill University, 1998.
- Canadian Marconi Scholarship, Marconi Canada, 1997.
- Gene H. Kruger Memorial Scholarship, Federation CJA, 1997.

University and Professional Activities

Reviewer, *Empirical Software Engineering. IEEE Transactions on Software Engineering*, SEKE 2004, ACM SIGPLAN PLAS Workshop 2006.

Student volunteer, International Conference on Software Engineering (ICSE), 2004.

President, Student Association of Graduate Engineers, Boston University, 2002.

Software Manager, Solar Car Racing Team, McGill University, 1999.

Student Representative, Electrical Engineering Curriculum Committee, McGill University, 1999.

Miscellaneous

Citizenship: Canada

Visa: F-1