

VITA

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Employment:

August 1988 - Present

Associate Professor of Computer Science, Michigan Technological University.

Research Areas: computer science education, computer architecture (instruction level parallelism).

February 1999 - May 1999

On sabbatical at the University of Iowa.

Taught an introductory programming class in Java (300+ students) and began work on a CS1 textbook that has been published by McGraw-Hill.

September 1991 - August 1993

Director, Center for Experimental Computation, Michigan Technological University.

July 1990 - August 1990

Consultant, Math. Sciences Section, Oak Ridge National Lab.

June 1989 - August 1989

Faculty Participation Program, Math. Sciences Section, Oak Ridge National Lab.

August 1983 - August 1988

Assistant Professor of Computer Science, Michigan Technological University.

July 1982 - August 1983

Technical Supervisor, Bell Laboratories

Supervision of a computer architecture group that provided system level support for the WE32000 microprocessor, and a group porting System V UNIX to the 3B2/300 workstation.

September 1978 - June 1982

Member of Technical Staff, Bell Laboratories.

Compiler design and maintenance, computer architecture definition and evaluation. One of my major projects was as a team leader in the design and analysis of a multiprocessor architecture that would support the Modula programming language. The project included the design and implementation of a Modula compiler and two simulators for the architecture - one at the instruction set level and one at a hardware block diagram level.

August 1975 - May 1978
Teaching Assistant, Purdue University.

Education:

- Ph.D. August 1978, Purdue University, Computer Science.
Thesis title: Error Recovery for Extended LL-Regular Parsers
Committee: C. Hoffman (chm), P. Young, M. Machtey, M. Halstead
- M.S. May 1975, Purdue University, Computer Science.
- B.S. June 1973, Michigan State University, Computer Science (with high honor).

Refereed Publications:

- (1) Poplawski, D. A. and Kurmas, Z. JLS/JLSCircuitTester: A Comprehensive Logic Design and Simulation Tool. *Proceedings of the Seventh Baltic Sea Conference on Computing Education Research*, November 2008, Koli National Park, Finland.
- (2) Poplawski, D. A. and Kurmas, Z. 2008. JLS: a pedagogically targeted logic design and simulation tool. *Proceedings of the 13th Annual Conference on innovation and Technology in Computer Science Education* (Madrid, Spain, June 30 - July 02, 2008). ITiCSE '08. ACM, New York, NY, 314-314.
- (3) Poplawski, D. A. 2007. A pedagogically targeted logic design and simulation tool. *Proceedings of the 2007 Workshop on Computer Architecture Education* (San Diego, California). WCAE '07. ACM, New York, NY, 1-7.
- (4) D. A. Poplawski, "Synthetic Models of Distributed-Memory Parallel Programs" *Journal of Parallel and Distributed Computing* 12:4 (August, 1991) 423-426.
- (5) D. A. Poplawski, "Mapping Rings and Grids onto the FPS T-Series Hypercube", *Parallel Computing* 7:1 (April, 1988) 1-10.
- (6) D. A. Poplawski and D. O. Rich, "Code Paging on Hypercubes", *Proceedings of the 1987 International Conference on Parallel Processing* (August, 1987) 710-712.
- (7) D. A. Poplawski, "Parallel Computer Architectures", *Journal of Applied Mathematics and Computation* 20:1-2 (September, 1986) 41-52.
- (8) D. A. Poplawski, "Low Cost Branch Prediction", *Proceedings of the Twenty-Third Allerton Conference on Communication, Control and Computing* (October, 1985) 979-983.
- (9) D. A. Poplawski, "On LL-Regular Grammars", *JCSS* 18:3 (June, 1979) 218-227.
- (10) G. Gates and D. A. Poplawski, "A Simple Technique for Structured Variable Lookup", *CACM* 16:9 (September, 1973) 561-565.

Textbook Authored:

David A. Poplawski, "Objects Have Class! An Introduction to Programming with Java", McGraw-Hill, 2002 (ISBN 0-07-242340-4).

Software Written:

JLS - A pedagogically targeted GUI-based logic simulation tool.
Used to teach logic design and computer organization at many colleges and universities

worldwide.

Unrefereed Publications:

- (1) R. Paul and D. A. Poplawski. "Visualizing the Performance of Parallel Matrix Algorithms", *Proceedings of the Fifth Distributed Memory Computing Conference*, 1990, pp. 1207-1212.
- (2) D. A. Poplawski, S. Pahwa and J. M. Francioni. "Models of Parallel Program Behavior", *Proceedings of the Fourth Conference on Hypercube Concurrent Computers and Applications*, 1989, pp. 857-860.
- (3) R. E. Horan and D. A. Poplawski, "Communication/Computation Paradigms for Hypercubes", *Proceedings of the Third Conference on Hypercube Concurrent Computers and Applications*, (1988) pp. 620-624.
- (4) J. M. Francioni, D. A. Poplawski and S. Pahwa, "Virtual Memory for a Hypercube Multiprocessor", *Proceedings of the Third Conference on Hypercube Concurrent Computers and Applications*, (1988) pp. 575-579.
- (5) B. K. Helminen and D. A. Poplawski, "A Performance Characterization of the FPS T-Series Hypercube", *Proceedings of the 1987 ARRAY Conference*, (1987) pp 71-83.
- (6) D. Bergmark, J. M. Francioni, B. K. Helminen and D. A. Poplawski, "On the Performance of the FPS T-Series Hypercube", *Hypercube Multiprocessors 1987*, pp. 193-199.

Grants:

"CISE Research Instrumentation", awarded April 1989, NSF CISE Research Instrumentation (NSF CDA-8820841); budget \$189,180; with S. Seidel, J. Francioni, and L. Ziegler.

"CSNET Services", awarded April 1985, NSF Division of Computer Research (NSF DCR-8511439); Budget: \$12,750; with K. Ottenstein.

"Behavior-Based Program Optimization", awarded summer 1984, Michigan Technological University. Budget: \$6,999.

"Computer Research Equipment (Computer Science)", awarded May 1984, NSF Division of Computer Research (NSF DCR-8404909); Budget: \$90,281; with K. Ottenstein and L. Ottenstein.

Invited Presentations:

- Kurmas, Z. and Poplawski, D. A. 2008. Teaching digital logic and computer organization with JLS: tutorial presentation. *J. Comput. Small Coll.* 24, 1 (Oct. 2008), 91-92.
- NSF Workshop on Interactive and Visual Technology in Computer Science Education, March 1996 - presentation and discussion on "The Future Classroom".
- 1987 ARRAY Conference, April 1987 - tutorial on programming the FPS T-Series hypercube.
- Upper Peninsula Zonal Mathematics and Computer Science Conference (NMU), April 1987 - talk on the architecture, performance and programming of the FPS T-Series hypercube.
- Los Alamos National Laboratory, September 1986 - seminar on the performance and operation of the FPS T-Series hypercube.
- Conference on Applications of Supercomputers, Michigan Technological University, August 1985 - tutorial on parallel processing computer architectures.

- Los Alamos National Laboratory, July 1982 - seminar on the design of a multiprocessor computer architecture.

Other Presentations:

- Fifth Distributed Memory Computing Conference, April 1990 - poster session on "Visualizing the Performance of Parallel Matrix Algorithms".
- Fourth Conference on Hypercube Computers and Applications, April 1989 - poster session on "Models of Parallel Program Behavior".
- Third Conference on Hypercube Computers and Applications, January 1988 - poster session on "Parallel Hypercube Virtual Memory".
- Third Conference on Hypercube Computers and Applications, January 1988 - poster session on "Computation/Communication Paradigms for Hypercubes".

Technical Reports:

- (1) S. Messaris and D. A. Poplawski, "Eager Prediction" CS-TR-96-03 (January 1996)
- (2) D. A. Poplawski, "The Unlimited Resource Machine" CS-TR-95-01 (February 1995)
- (3) L. Hopkins and D. A. Poplawski, "Domain Partitioning on a MIMD Architecture With Vector Processor Nodes" CS-TR-91-06 (August 1991)
- (4) J. Murray and D. A. Poplawski, "Performance Prediction of Distributed Memory Parallel Architectures" CS-TR-91-05 (June 1991)
- (5) D. A. Poplawski, "Synthetic Models of Distributed Memory Parallel Programs" CS-TR-90-04 (September 1990) (also ORNL/TM-11634)
- (6) M. J. Groeschel and D. A. Poplawski, "Parallel Virtual Memory: Implementation and Program Modeling Tools" CS-TR-89-11 (November 1989)
- (7) D. A. Poplawski, "Node and Communication Performance of the Ametek Series 2010" CS-TR-89-02 (February 1989)
- (8) S. Pahwa and D. A. Poplawski, "Models of Virtual Memory for a Hypercube Multiprocessor" CS-TR 88-03 (July, 1988)
- (9) R. E. Horan and D. A. Poplawski, "Communication/Computation Paradigms for Hypercubes" CS-TR 88-02 (February, 1988)
- (10) J. M. Francioni, D. A. Poplawski and S. Pahwa, "Virtual Memory for a Hypercube Multiprocessor" CS-TR 87-07 (May, 1987)
- (11) B. K. Helminen and D. A. Poplawski, "A Performance Characterization of the FPS T-Series Hypercube" CS-TR 87-06 (February, 1987)
- (12) D. A. Poplawski and D. O. Rich, "Code Paging on a Hypercube" CS-TR 87-01 (January, 1987)
- (13) D. A. Poplawski, "Mapping Rings and Grids onto the FPS T-Series Hypercube" CS-TR 86-12 (November, 1986).
- (14) D. A. Poplawski, "Ring Connectivity in the FPS T-Series Hypercube", CS-TR 86-10 (October, 1986).
- (15) D. Bergmark, J. M. Francioni, B. K. Helminen and D. A. Poplawski, "On the Performance of the FPS T-Series Hypercube" CS-TR 86-09 (October, 1986)
- (16) D. A. Poplawski, "Parallel Computer Architectures" CS-TR 86-05 (March, 1986)

- (17) D. A. Poplawski, "An Empirical Approach to Detecting and Exploiting Large Grained Parallelism", CS-TR 86-1 (February, 1986).
- (18) D. A. Poplawski, "Low Cost Branch Prediction" CS-TR 85-01 (September, 1985)

Professional Activities:

- Member of Association for Computing Machinery, ACM special interest groups on Computer Science Education (SIGCSE) and Computer Architecture (SIGARCH), IEEE Computer Society

Instructional Activities, 1983-present:

(semester calendar, starting in Fall 2000)

- CS 1000 - Computer Science Orientation
- CS 1121 - Introduction to Computer Science I (Java)
- CS 1122 - Introduction to Computer Science II (Java)
- CS 1721 - Object Oriented Design (Java)
- CS 3421 - Introduction to Computer Architecture

(quarter calendar, prior to Fall 2000)

- CS 100 - Computer Science Orientation
- CS 110 - Introduction to Programming (FORTRAN)
- CS 121 - Introduction to Computer Science I (C++ and Java)
- CS 132 - Accelerated Introduction to Computer Science I & II (C++)

- CS 211 - Advanced Programming Techniques

- CS 310 - Data Structures and Algorithms
- CS 345 - Computer Organization

- CS 400 - CS Problem/Project (senior project)
- CS 410 - File System Organization
- CS 430 - Compiler Construction
- CS 440 - Operating Systems
- CS 450 - Advanced Computer Organization
- CS 499 - Directed Study in Computer Science

- CS 520 - Operating Systems
- CS 560 - Parallel Computer Architectures
- CS 590 - Parallel Processing Seminar
- CS 599 - Reading and Research

Supervised fifteen M.S. theses:

Student	Thesis Title
Roy Johnson	A Computer Architecture for Program Behavior Measurement

Ann Smith	A Program Specific Analysis of Cache Memory in Multiprocessors
Dave Rich	A Software Implementation of Code Paging
Brenda Helminen	An Analysis of the Floating Point and Communication Performance of the FPS T-Series Hypercube
Richard Horan	Communication/Computation Paradigms for Hypercubes
Seema Pahwa	Models of Virtual Memory for Hypercube Multiprocessors
Michael Groeschel	Parallel Virtual Memory: Implementation and Program Modelling Tools
Richard Paul	Visualizing the Performance of Parallel Matrix Algorithms
Prasanna Anireddy	Using and Enhancing a Visual Parallel Performance Analysis Tool
Jodi Murray	Performance Predictions of Distributed Memory Parallel Architectures
Larry Hopkins	Domain Partitioning on a MIMD Architecture with Vector Processing Nodes
John DeRung	An Event-Based Simulator for Benchmarking Distributed Memory Parallel Architectures
Atul Bhalla	Design and Implementation of a Switched Network of Workstations (SNOW)
Sanjay Gupta	The Design and Development of Software for a Switched Network of Workstations
Connie Peterman	An Analysis of Instruction-Level Parallelism in Several Common Benchmarks
Pat Marcell	The Effects of Branch Strategies on Instruction Level Parallelism
Mohammed Sami	Influence of Memory Structures on Instruction Level Parallelism
Chris Argenta	Register Partitioning for Superscalar Architectures
Spiridon Messaris	Eager Prediction

and two M.S. projects:

Student	Project Title
Sanghamitra Patra	The Development of a Modelling and Simulation System to Support the Analysis of Computer Architectures
Saamil Shah	An Assembly Language Integrated Development Environment

Have served on many other M.S. and Ph.D. committees.