

Dee A. B. Weikle

Department of Computer Science
James Madison University
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Education

Ph.D Computer Science University of Virginia, May 2001
Dissertation: "Caches As Filters: A Framework for the Analysis of Caching Systems"
Masters of Computer Science University of Virginia, May 1996
B.S. Electrical Engineering Rice University, May 1985
(fulfilled requirements for a B. A. Computer Science, Rice University, May 1985)

Research Interests

STEM education. Computer systems architecture with an emphasis on analytical modeling and performance evaluation methodologies. Socially responsible computing.

Honors

Recipient, "2019 Transfer Advocate Award", JMU Orientation Office, Aug. 2019.
Recipient, "NSF Advance Fellows Award: Caches as Filters Benchmark Characterization and Demonstration", 2004.
Best Paper Award, "Caches As Filters: A New Approach to Cache Analysis"
Sixth International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS'98)

Publications

Google Scholar H-Index: 4, Citations: 179 Since 2013: H-index: 2, Citations: 35
(*indicates advised graduate student author, **indicates advised undergraduate author)

Journal

**Megan Gilbert, Dee. A. B. Weikle, Chris Mayfield, Chris Johnson. "Fourth Hour: A CS1 Review Session Led by Teaching Assistants Using Peer Instruction", Journal of Computing Sciences in Colleges, CCSC-CP Conference, April 8-10, 2021.

D. A. B. Weikle. "A Basic RISC-V Verilog Datapath Project Experience for Software Engineers", Journal of Computing Sciences in Colleges, CCSC-E Conference, October 25-26, 2019.

D. A. B. Weikle. "More Insights on a Peer Tutoring Model for Small Schools with Limited Funding and Resources." Journal of Computing Sciences in Colleges, CCSC-E Conference, October 23-24, 2015.

D. A. B. Weikle, M. Murray. "Improving CS Class Discussions Using the 5 Practices." Journal of Computing Sciences in Colleges, CCSC-E Conference, November 1-2, 2013.

D. A. B. Weikle. "Two Concrete Examples of Upper-Level Writing Assignments in an Algorithms Course," *Journal of Computing Sciences in colleges*, CCSC-E Conference, November 2-3, 2012.

*M. Co, D. A. B. Weikle, K. Skadron, "Evaluating Trace Cache Energy-Efficiency," *ACM Transactions on Architecture and Code Optimization*, Vol. 3, No. 4, pp. 450-476, 2006.

S. A. McKee, Wm. A. Wulf, J. H. Aylor, R. H. Klenke, M. H. Salinas, S. I. Hong, and D. A. B. Weikle, "Dynamic Access Ordering for Streamed Computations", *IEEE Transactions on Computers*, November 2000, pp. 1255-1271.

Conference/Workshop

Dee A. B. Weikle, Michael Stewart, Sharon Simmons. 2020. "Teaching Assistant Training Programs as a Vital Component of Broadening Participation." Workshop In Proceedings of the Richard Tapia Celebration of Diversity In Computing (TAPIA '20), September 2020.

Dee A. B. Weikle, Michael O. Lam, and Michael S. Kirkpatrick. 2019. "Automating Systems Course Unit and Integration Testing: Experience Report." In Proceedings of the 50th ACM Technical Symposium on Computer Science Education (SIGCSE '19). ACM, New York, NY, USA, 565-570. DOI: <https://doi.org/10.1145/3287324.3287502>

**P. Sitthi-amorn, D. A. B. Weikle, K. Skadron. "Exploring the Impact of Normality and Significance Tests in Architecture Experiments," In Workshop on Modeling, Benchmarking, and Simulation (MoBS), held in conjunction with International Symposium on Computer Architecture (ISCA), June 2006.

*M. Co, D. A. B. Weikle, K. Skadron, "A Break Even Formulation for Evaluating Branch Predictor Energy Efficiency", In Workshop Proceedings of the International Conference of Computer Architecture (ISCA), June 2005.

D. A. B. Weikle, S. A. McKee, K. Skadron, Wm. A. Wulf, "Caches As Filters: A Framework for the Analysis of Caching Systems", *Grace Murray Hopper Conference 2000*, Sept. 14-16, 2000.

D. A. B. Weikle, S. A. McKee, Wm. A. Wulf, "Caches As Filters: A New Approach to Cache Analysis", *Sixth International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS'98)*, July 19-24, pp. 2-12, Montreal, Canada.

Technical Reports

*J. Meng, D. A. B. Weikle, G. Humphreys, K. Skadron, "An Approach on Hardware Design for Computational Photography Applications based on Light Field Refocusing Algorithm", University of Virginia, Department of Computer Science, Technical report CS-2007-15, November 2007.

*J. Meng, D. A. B. Weikle, K. Hazelwood, "ParaWeaver: Performance Evaluation on Programming Models for Fine Grained Threads", University of Virginia, Department of Computer Science, Technical Report CS-2007-09, May 2007.

*J. Meng, **H. Cook, K. Skadron, D. A. B. Weikle, "Comparing Doom 3, WarCraft III, PBRT, and MESA Using Micro-architecturally Independent Characteristics", University of Virginia, Department of Computer Science, Technical Report CS-2007-04, 2007.

*M. Co, D. A. B. Weikle, and K. Skadron. "Potential for Branch Predictor Adaptation at the Program and Phase Level for Performance and Energy-Efficiency." University of Virginia, Department of Computer Science Technical Report No. CS-2005-19, November, 2005.

D. A. B. Weikle, K. Skadron, S. A. McKee, Wm. A. Wulf, "TSpec: A Notation for Describing Memory Reference Traces", University of Virginia, Department of Computer Science, Technical Report CS-2000-23, August 2000.

D. A. B. Weikle, K. Skadron, S. A. McKee, Wm. A. Wulf, "Caches As Filters: A Unifying Model for Memory Hierarchy Analysis", University of Virginia, Department of Computer Science Technical Report CS-2000-16, June 2000.

S. A. McKee, D. A. B. Weikle, and Wm. A. Wulf, "TSpec: A Specification of Memory Access Traces", University of Virginia, Department of Computer Science Technical Report CS-97-19, August, 1997.

D. A. B. Weikle, and Wm. A. Wulf, "TGEN: Programmer's Reference Manual", University of Virginia, Department of Computer Science, Technical Report CS-97-22, August, 1997.

S. A. McKee, D. A. B. Weikle, K. L. Wright, C. W. Oliver, A. P. Voss, M. H. Salinas, R. H. Klenke, T. C. Landon, Wm. A. Wulf, and J. H. Aylor, "Avoiding Irreproducible Results: Modeling the Stream Memory Controller", University of Virginia, Department of Computer Science, Technical Report CS-95-50, October 1995.

Scholarly Presentations

"Fourth Hour: A CS1 Review Session Led by Teaching Assistants Using Peer Instruction", Journal of Computing Sciences in Colleges, CCSC-CP Conference, April 8-10, 2021.

“A Basic RISC-V Verilog Datapath Project Experience for Software Engineers”, Journal of Computing Sciences in Colleges, CCSC-E Conference, October 25-26, 2019.

“Automating Systems Course Unit and Integration Testing: Experience Report.” 50th ACM Technical Symposium on Computer Science Education (SIGCSE '19). Minneapolis, MN February 28 – March 2, 2019.

“ACM-ETHICS: Strategies for Integrating the Updated ACM Code of Ethics into the Computing Curriculum.” SIGCAS Workshop on Ethical Computing. Special Interest Group in Computer Science Education Conference (SIGCSE) 2018. Baltimore, MD. February 2018. Co-presenter with Karla Carter, Bellevue University and Michael Kirkpatrick, James Madison University.

“Active Learning Strategies for Integrating the ACM Code of Ethics into CS Courses.” SIGCAS/COPE BOF (Birds of a Feather). Special Interest Group in Computer Science Education Conference (SIGCSE) 2018. Baltimore, MD. February 2018. Co-presenter with Michael Kirkpatrick, James Madison University.

“From One Beginner to Another – How To Get git Into Your Classroom.” Consortium of Computing Sciences in Colleges, CCSC-E Conference, October 20-21, 2017.

“Strategies for Integrating Driverless Cars into the Computing Curricula.” SIGCAS Workshop on Ethical Computing. Special Interest Group in Computer Science Education Conference (SIGCSE) 2017. Seattle, WA. March 2017. Co-presenters M. Kirkpatrick, S. Conley, E. York, James Madison University; M. Quinn, Seattle University.

“Using the 5 Practices to Improve Facilitation of POGIL Activities.” Lightning Talk. Special Interest Group in Computer Science Education Conference (SIGCSE) 2017. Seattle Washington. March 2017.

“More Insights on a Peer Tutoring Model for Small Schools with Limited Funding and Resources.” Consortium of Computing Sciences in Colleges, CCSC-E Conference, October 23-24, 2015.

“A Peer Tutoring Model for Small Schools with Limited Funding and Resources.” Lightning Talk. Special Interest Group in Computer Science Education Conference (SIGCSE) 2015. Kansas City, MO. March 2015.

“Juggling the Jigsaw: Ways to Handle Growing CS Enrollment and Encourage Diversity.” BoF Panel Session. Accepted with Dr. Farzana Rahman. Special Interest Group in Computer Science Education Conference (SIGCSE) 2015. Kansas City, MO. March 2015.

“CSG-Ed: A Beginning Trio for a CS0 Course.” SIGCAS Workshop on Computing for the Social Good – Educational Practices. Special Interest Group in Computer Science Education Conference (SIGCSE) 2015. Kansas City, MO. March 2015.

“Improving CS Class Discussions Using the 5 Practices.” Consortium of Computing Sciences in Colleges, CCSC-E Conference, November 1-2, 2013.

“Two Concrete Examples of Upper-Level Writing Assignments in an Algorithms Course,” Consortium of Computing Sciences in Colleges, CCSC-E Conference, November 2-3, 2012.

“Nifty Computing In Society Case Studies” BoF Panel Session. Special Interest Group in Computer Science Education Conference (SIGCSE) 2013. Denver, Colorado, March 2013.

“When Half the Class Still Doesn’t Get It: Turning a Test into a Community Learning Experience” Nifty Idea: Consortium for Computing Sciences in Colleges Eastern Conference (CCSC-E) October 2011.

“Caches As Filters: A Framework for the Analysis of Caching Systems”, Grace Murray Hopper Conference 2000, Sept. 14-16, 2000. (based on paper by D. A. B. Weikle, S. A. McKee, K. Skadron, Wm. A. Wulf)

Service Presentations

“Computer Science Inclusive Space Renovation” – Learning Spaces Collaboratory Meeting, James Madison University, May 10, 2019.

“Elder Exchange: The Space Between: A Christian Engagement with the Built Environment” – Respondent, Detwiler Auditorium, VMRC, May 9, 2019.

“Social Media: What is it and how is it affecting us?” Westminster Presbyterian Church Adult Education Offering Sunday, October 9 and Sunday, October 16, 2011.

“Programming vs. coding – what’s the difference anyway?” MSC Conference for IT Faculty at EMU April, 2011.

“High School Math Used in Computer Graphics” MSC Conference for Mathematics Faculty at EMU March 25 – 27, 2010.

Grants Awarded

NCWIT-Extension Services Undergraduate Program Mini Grant Jan. 2019

Principal Investigator: Dee A. B. Weikle

Other Personnel: Sharon Simmons, John Bowers, Michael Kirkpatrick, Chris Mayfield, Michael Stewart

Amount: \$10,000

Period of Support: 1 year January – December 2019.

Recipient, "JMU - Provost's Faculty grant," Spring 2018.

"Performance and Precision System Analysis" with Mike Lam and Michael Kirkpatrick.

Recipient, "JMU - Madison Trust Foundation," Fall 2017 and Spring 2018.

"More Than One" with Sharon Simmons and Farzana Rahman.

Recipient, "CSPOGIL Travel Grant" SIGCSE, 2018.

Recipient, "CSPOGIL. Mentor, Cohort 1: Stipend." Fall 2017.

Recipient, "Madison Collaborative Travel Grant" Spring 2017.

Recipient, "CSPOGIL Travel Grant" SIGCSE, 2017.

Recipient, "CSPOGIL Cohort 0: Stipend" Spring 2017.

Recipient, "EMU – Scholarship Release Time Grant," 2015-2016.

"PCA and Clustering Software Development for Inter-disciplinary Multivariate Analysis"

Recipient, "EMU – Summer Scholarship Grant," Summer 2013.

"Social and Ethical Implications of a Computing Culture"

Recipient, "EMU – STEM Travel Grant," Spring 2012. (SIGCSE attendance)

Recipient, "EMU – Scholarship Release Time Grant," 2011-2012.

"Responsible Citizenship in a Technological Democracy"

Project Parallax

Principal Investigators: Catherine Brighton, Tonya Moon

Other Senior Personnel: Dee A. B. Weikle, Garrick Louis, Irina Mitrea, Glen Bull, Carol Tomlinson, John Park, Bill Ferster, Tim Konold

Javits Gifted and Talented program, administered by U.S. Dept. of Education

Amount: \$2,500,000

Period of Support: 5 years beginning October 1, 2008.

Caches as Filters Benchmark Characterization and Demonstration

Principal Investigator: Dee A. B. Weikle

NSF Award Number, ADVANCE Fellows Award: CNS-0340813,

Amount: \$266,626

Period of Support: 05/15/04-04/30/07.

Summary Teaching Related Activities (Context/Details Below)

James Madison University Courses

CS149 – Introduction to Programming, Fall 2016, Fall 2017, Spring 2018, Fall 2018, Fall 2019, Fall 2020

CS159 – Advanced Programming, Spring 2017, Spring 2018, Spring 2019, Spring 2020, Spring 2021

CS261 – Computer Systems I, Fall 2017. Fall 2018. Fall 2019. Fall 2020.

CS456 – Advanced Computer Architecture, Spring 2019. Spring 2020.

Note: EMU Instructor rating metric: Overall quality of teaching possible 5.0

EMU Course rating metric: Overall quality of course possible 5.0

Eastern Mennonite University Courses

CS333 – Special Topics - Computers and Society Spring 2014, 2015

Instructor rating: 4.8/5.0, 4.7/5.0 Course rating: 4.5/5.0, 4.7/5.0

Computers are ubiquitous in today's world, yet their presence and influence can be subtle. How have they affected society to-date and what is their influence on us as individuals and as a society today? What does Anabaptist theology and tradition have to offer us in the way of guidance in determining when and how to use this fantastic technology? In this class we will explore these questions and begin to define our own criteria for what a computer and technology built on computers means in our lives.

CS333- Special Topics-Algorithms and Games, Spring 2013

Instructor rating: 4.3/5, Course rating: 4.7/5

Basic Analysis of Algorithms course taught via discussion of algorithms and planning of final game of students choosing. Covered basic efficiency analysis including recurrence relations, sorting, searching, recursion, divide and conquer, dynamic programming, greedy algorithms, and iterative improvement. Final project was game that incorporated 5 algorithms, including poster presentation.

CS333- Special Topics-Compilers, Spring 2012

Instructor rating: 4.7/5, Course rating: 4.7/5

Modified labs and assignments from similar course taught at UVA. Added homework via on-line Gradiance system developed at Stanford. Students completed lexical analyzer, parser, and simplified code generator in Java using automated tools jflex and cup for COOL teaching language.

CS220 – Intermediate Java, Spring 2011, 2012, 2013, 2014, 2015

Instructor rating: 4.3/5, 4.5/5, 4.5/5, 4.8/5.0, 4.8/5.0

Course rating: 4.0/5, 4.6/5, 4.5/5, 4.8/5.0, 4.5/5.0

Designed all labs and assignments, introduced control structures, if-then-else, while, for, conditional statements, Java programming conventions, object-oriented programming techniques such as simple inheritance, polymorphism, and introduction to basic applet and graphics libraries, sorting techniques

CS340 – Analysis of Algorithms, Spring and Fall 2011, Fall 2013

Instructor rating: 4.6/5, 4.7/5, 4.3/5.0 Course rating: 4.8/5, 4.7/5, 4.3/5.0

Designed all homework and writing assignments. Taught as Writing Intensive course to meet General Education requirements, intensive study of sorting algorithms, analysis of running times of standard algorithms including summation and recurrence relations, included topics in dynamic programming, greedy algorithms, and P, NP, NP-Hard definitions along with limitations of algorithms.

CS250 – Architecture and Operating Systems, Fall 2010-2014

Instructor rating: 4.8/5, 4.3/5, 4.5/5.0, 3.9/5.0, 3.9/5.0,

Course rating: 4.2/5, 4.3/5, 4.7/5.0, 4.3/5.0, 4.3/5.0,

Designed all homework and labs. Labs consisted of assembly language programming with PCSpim, logic design with Logisim, along with datapath design. Operating system functionality and how it is related to the computer architecture in terms of virtual memory, privileged instructions, and concurrency through test-and-set instructions were covered in addition to MIPS computer architecture and design.

CS320 – Data Structures, Fall 2010, Fall 2012, Fall 2014

Instructor rating: 4.5/5, 4.2/5.0, 4.2/5.0 Course rating: 4.8/5, 4.6/5.0, 4.4/5.0

Designed and graded all assignments and lectures. Assignments consisted of programming assignments in Java to create data structures including arrays, linked lists, trees, expression trees, heaps, and hash-tables. Basic algorithmic complexity analysis also covered.

MATH130 – Finite Math, Fall 2010, Spring 2012, Spring 2013

Instructor rating: 3.4/5, 4.1/5, 4.3/5 Course rating: 3.7/5, 4.1/5, 4.5/5

Lectured, created assignments. Covered topics including problems solving, set theory, logic, graph theory, numerations systems, number theory, and probability.

CS110 – Introduction to Computer Science, Spring, Fall 2010, Fall, Spring 2011, Fall 2012, Spring 2013, Fall 2013, Spring 2014, Fall 2014, Spring 2015

Instructor rating: 3.9/5, 4.1/5, 3.9/5, 3.6/5 4.1/5.0, 4.8/5.0...4.3/5.0

Course rating: 4.0/5, 4.4/5, 4.2/5, 3.8/5, 4.3/5.0, 4.3/5.0...4.7/5.0

Lectured, designed all labs and assignments, graded all course materials and evaluated students. Content includes brief survey of most areas of computer science: Architecture, Operating Systems, Algorithms, Theory, Software Engineering, and Programming Languages as well as ethical implications of the practice of computer science and scientific method.

CS333 – Introduction to Computer Graphics and Rendering, Spring 2010

Designed course, graded all course materials and evaluated students. Content included overview of techniques and mathematics used in computer graphics rendering including an introduction to computer graphics processing hardware. Students were required to program in OpenGL. Final project was a 3D graphics interactive game written in OpenGL. No evaluation data available.

University of Virginia Courses

CS493 – Undergraduate Seminar, Architecture Simulation Methodology, Fall 2006.

Co-Instructor: Kevin Skadron. Students read selected papers and traced applications using CHUUD tools for use in multi-core research.

ENGR-162 – Introduction to Engineering Workshop, Fall 2003.

Lectured, designed project and all assignments, graded all assignments.

Rating: 3.63 100-Level Course Mean: 3.57

Other Instructional Experience

Geometry - Upward Bound Program, University of Virginia, Summer 1993.

Motorola 68000/88000 Training Sessions, 1989-1992.

Created, organized, and presented training sessions for field application engineers including week-long session in Hong Kong.

Professional Experience

08/16-Present Associate Professor

Computer Science Department, James Madison University, Harrisonburg, VA

Department Chair: Dr. Sharon Simmons

Current Courses: Introduction to Programming, Advanced Programming, Computer Systems I, Advanced Computer Architecture.

05/14-5/16 Associate Professor

Mathematical Sciences Department, Eastern Mennonite University, Harrisonburg, VA

Department Chair: Dr. Owen Byer

Current Courses: Introduction to Computer Science, Analysis of Algorithms, Java Programming, Data Structures, Python, Foundations of Math, Computer Architecture and Operating Systems, Computers and Society

08/10-05/14 Assistant Professor

Mathematical Sciences Department, Eastern Mennonite University, Harrisonburg, VA

Department Chair: Dr. Owen Byer

Courses: Finite Math, Introduction to Computer Science, Analysis of Algorithms, Java Programming, Data Structures, Compilers, Graphics

01/10-05/10 Adjunct Professor

Mathematical Sciences Department, Eastern Mennonite University, Harrisonburg, VA

Department Chair: Dr. Deirdre Smeltzer

Taught two courses, CS110 Introduction to Computer Science and CS333 Introduction to Computer Graphics and Rendering. Participated as full faculty member, attended advising night, Honors mentor, presented at MSC Conference.

05/08-01/10 Consultant

Curry School of Education, University of Virginia, Charlottesville, VA

Collaborators: Dr. Tonya Moon, Dr. Catherine Brighton

Developing problem-based STEM curriculum in the elementary grades to help identify gifted and talented students of a diverse background and improve educational opportunities in rural southwest Virginia.

05/04-05/08 Research Scientist

Department of Computer Science, University of Virginia, Charlottesville, VA

Benchmark Characterization and Demonstration Project

Principal Investigator: Dee A. B. Weikle

Performed analysis on benchmarks. Co-advised PhD students. Advised first-year undergraduates. Senior thesis advisor. Co-taught seminar course for undergraduate/graduate students. Formed liaison with Curry school faculty, participated in K-12 curriculum development projects.

08/03-05/04 Adjunct Professor

Undergraduate Dean's Office, University of Virginia, Charlottesville, VA

Lecturer: ENGR-162, first year design course

This course provides an overview of the engineering profession and the disciplines and functions within engineering. It also introduces students to engineering design, and the role of creativity in the solution of open-ended (design) problems. Course includes a significant, hands-on, project. Our project centered on Syndrome X. Students designed and built an interactive display outlining the risks of Syndrome X, complete with bicycles that could be ridden and speed reflected on lights on display. Students surveyed community before and after demonstration to determine effectiveness of display. Class included lectures, discussion sessions, and final project. Also developed web pages for ABET accreditation for engineering school.

Instructor Rating: 3.63 *All 100-Level Course Mean Instructor Rating:* 3.57.

01/94-05/01 Graduate Research Assistant

Department of Computer Science, University of Virginia, Charlottesville, VA

Memory Access Analysis (MACE) project

Principal Investigators: Wm. A. Wulf and Alan P. Batson

Developed analytical measures for determining effectiveness of caches. Designed and developed software tool for the computation and display of measures. Designed trace generation processor and developed trace language. Co-advised undergraduate theses.

1/96-5/96, 1/94-5/94 Teaching Assistant

Department of Computer Science, University of Virginia, Charlottesville, VA

CS493: Seminar in Memory Systems Architecture, Instructor: Wm. Wulf

Prepared course syllabus, selected readings, supervised projects, and evaluated students.

CS101: Introduction to Computer Science, Instructor: J. Prey

Supervised lab section, graded lab and homework assignments.

6/93-7/93 Instructor

Upward Bound Program, University of Virginia, Charlottesville, VA

Taught five-week geometry course to twenty high school students from disadvantaged backgrounds. Created course content, including lectures, tests, and homework assignments. Graded all assignments and evaluated students.

8/91-3/92 RISC Technical Communications Manager

Motorola Microprocessor and Memories Technologies Group, Austin, TX

Supervisor: Gary Montgomery

Educated field engineering and sales personnel on RISC microprocessor products. Lead teams for two separate, week-long training sessions for approximately fifty engineers.

(Presented one session alone in Hong Kong.) Defined training content, organized materials, and arranged facilities.

5/89-8/91 Applications Engineer

Motorola Microprocessor and Memories Technologies Group, Austin, TX

Supervisor: Clara Serrano

Provided applications support to customers and Motorola design engineering for M88000 RISC products. Promoted in September 1990. Completed technical, managerial, and marketing projects.

Designed top-level of display interface for 3D Graphics Controller using and 88100 and two 96000s. Presented design concepts to customers and field engineering.

Troubleshoot customer technical problems from coding errors to loading and layout issues. Assisted in definition of timing specifications. Reviewed technical documentation, including user's manuals, technical summaries, and application notes. Wrote application notes.

Managed four separate, three-month rotations through department as a senior group engineer. Those supervised included two cooperative students, one recent graduate, and one exchange engineer from Japan. Created and defined rotation projects. Guided, motivated, and evaluated employees. Organized and tracked all customer problems reported to group. Coordinated resolutions with design engineering.

Marketing accomplishments included creation and repeated presentation of two-day seminar for sales force, conception and supervision of glossy, four-page product brochure and compilation of product graphics material into applications book.

10/86-5/89 *Engineer Scientist* (Avionics)

Tracor Aerospace, Austin, TX

Supervisor: Jerry Hewell

Served as an electrical engineer for the Omega Navigations System product line. Promoted in 1987. Responsibilities consisted of technical and managerial tasks. Introduced technical improvements in the product line by redesigning components and printed wiring boards. Assisted in the redesign of an ASIC device used as a Harvard-architecture RISC microprocessor. Ensured successful completion of this time-critical project by identifying potential problems and appropriate solutions for management. Improved efficiency of production-line test and repair areas by debugging previously designed test equipment. Encouraged use of this equipment by writing clear documentation and training technicians. Responsibilities included acting as a part-time manager for the Avionics section of Electrical Engineering for approximately six months. As an engineer and manager, organized certain aspects of the department by introducing methods for tracking all tasks in work, and establishing priorities for each.

6/85-10/86 *Engineer Scientist* (Telecommunications)

Tracor Aerospace, Austin, TX

Supervisor: Bill Dicke

Served as Project Engineer for the last phase of a test set for Tracor's Fixed Record Communications Terminal. Scheduled and prioritized engineering tasks, tracked progress of support groups, and facilitated successful completion of the program by restoring customer's confidence during a three-week equipment demonstration. Also, produced design changes, drawings, and tested equipment.

Professional Societies

Association for Computing Machinery (ACM), SIGCAS, SIGCSE - current
Institute of Electrical and Electronics Engineering (IEEE) – past only

Conferences/Training Sessions Attended (since PhD graduation)

Consistently attended JMU January and May Symposiums since 2017.
WCAE19 – Workshop on Computer Architecture Education, Summer 2019.
ISCA - International Symposium on Computer Architecture, Summer 2019.
SIGCSE – Symposium on Computer Science Education
March 2011, Feb. 2012, March 2013, March 2015, March 2016,
March 2017, Feb. 2018, Feb/March 2019.
NCWIT Summit, May 2018, May 2019.
jmUDESIGN, Summer 2018.
CS-POGIL Training, Summer 2017.
CCSC-E - Consortium for Computing Sciences in Colleges Eastern Conference
Oct. 2011, Nov. 2013, Oct. 2015, Oct. 2017.
POGIL Facilitators Training, Summer 2016.
JMU Assessment Training 101, Summer 2016.
POSSE15 – Professors Open Source Software Experience (Red Hat, Raleigh NC)
September 2015. <http://www.redhat.com/posse/>
EMU Attachment Conference April 2011.
Math Specialist Instructors Workshop March 30-31, 2008.
Best Practices Institute (UVA) March 6-8, 2008.
High Performance Computer Architecture February, 2005 and 2007.
Service Learning in Engineering May, 2006.
Int. Symp. on Workload Characterization Fall, 2005 and 2006.

Service

Professional

Program Chair and Program Committee, CAPWIC 2020.
Speakers Chair and Program Committee, CAPWIC 2019.
Paper Reviewer, SIGCSE2019.
Program Chair, PHICWIC 2018.
Editor, SIGCAS Newsletter Aug. 2016 – January 2018.
Technical Program Chair, CAPWIC 2017.
Deputy Editor, SIGCAS Newsletter Aug. 2013 – August 2016.
Poster Reviewer, SIGCSE 2017 conference.
Paper Reviewer CCSC-E 2015 conference
CCSC-E 2013 Workshop, Tutorials, and Panels Chair
EMU Committee on Teacher Education (COTE) – May 2012-present
EMU Information Systems Planning committee (ISPC) – May 2012-present.
EMU Intellectual Life Committee – May 2012-2015.
EMU Student Computer Club Sponsor – Jan. 2011-present.
MSC Conference for IT Faculty at EMU - April, 2011.
MSC Conference for Mathematics Faculty at EMU - March 25 – 27, 2010.
Program Committee, IEEE Int. Symp. on Workload Characterization, 2006.

Program Committee, Int. Conference on Parallel Processing, 2006.
New Investigators Papers Committee, Grace Murray Hopper Conference, 2004.

Collaborators

Dr. Mike Lam, Dr. Michael Kirkpatrick, Dr. Chris Mayfield James Madison Univ.
Dr. Matt Sidehurst, Dr. Tara Kishbaugh, Dr. Stephen Cessna, Chemistry, EMU
Dr. Kelly Shaw, Computer Science Dept., University of Richmond
Dr. Jeanne Horst, Psychology Dept., James Madison University
Mr. Charles Cooley, Mathematical Sciences Dept., Eastern Mennonite University
Dr. Sally McKee, Chalmers University, Gothenburg, Sweden.
Dr. Kevin Skadron, Dept. of Computer Science, University of Virginia.
Dr. Tonya Moon, Curry School of Education, University of Virginia.
Dr. Catherine Brighton, Curry School of Education, University of Virginia.
Dr. Garrick Louis, Dept. of Systems Engineering, University of Virginia.

Graduate Advisor: Dr. William Wulf, AT&T Professor, Dept. of Computer Science,
University of Virginia. Past- President, National Academy of Engineering.

Graduate Co-Advisors: Dr. Kevin Skadron, Dr. Sally McKee

Graduate Advisees:

Dr. Michele Co, Research Associate, Dept. of Computer Science, University of Virginia
Thesis: “Designing Energy-Efficient Fetch Engines”, Graduated PhD: August, 2006.
www.cs.virginia.edu/~mc2zk/
Email: michele.co@gmail.com

Jiayuan Meng, PhD Student, Dept. of Computer Science, University of Virginia
www.cs.virginia.edu/~jm6dg/
Email: jerrygonair@hotmail.com

Undergraduate Advisees:

Megan Gilbert, James Madison University, Honors Proposal, “A Pilot Study on the
Impact of Teaching Assistant Led CS1 Study Sessions using Peer Instruction”, May
2019.

Adam Blalock, James Madison University, Honors Thesis, “A Study of the Effect of
Memory System Configuration on the Power Consumption of an FPGA Processor.”, May
2019.

Alex Bender, Eastern Mennonite University, Current research projects on the use of PCA
and Clustering Analysis. Expected graduation, May 2016.

Mark Harder, Eastern Mennonite University, Current research projects on Parallel
Workload Characterization using E-Flynn. Graduated, May 2014.

Aaron Springer, Eastern Mennonite University, Research projects on Investigating The Influence of Electronic Communication on Personal Relationships, and Parallel Workload Characterization using E-Flynn. Graduated, May 2013.

Eric Brodersen, Eastern Mennonite University, Research Project on Learning Games for Math and Computer Science. Graduated, May 2012.

Rachel House, University of Virginia, Thesis: “How A Computer Works: Teaching Computer Architecture Concepts to Students Aged Ten Through Twelve”, Graduated: May, 2007, University of Virginia.

Renee En Tsou, University of Virginia, Thesis: Website for ENGR162 Students, Graduated: May 2006.