

Thomas P. Way

Assistant Professor, Computing Sciences
Program Manager, ARCES Project

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EDUCATION

Ph.D.	2002	Computer Science	University of Delaware
M.S.	1997	Computer Science	University of Delaware
B.A.	1984	Film & Television	University of Maryland, College Park

RESEARCH

Program Manager **2006-present**
Applied Research in Computing Enterprise Services (ARCES)
*Manage research team of 20 faculty, students and staff, 10 industry partners.
U.S. Air Force research project
Villanova University, in cooperation with Gestalt, LLC*

Director **2005-present**
Applied Computing Technology Laboratory (ACT Lab)
*Research pedagogy project, developing student research abilities,
fostering collaborative research, producing publishable results.
Department of Computing Sciences*

Assistant Professor **2002-present**
Villanova University - Villanova, Pennsylvania
Department of Computing Sciences

Research Areas
Nanocompilers, computer architecture, system modeling and simulation, applied computing technology, computer science research pedagogy, technology literacy.

GRANTS / DIRECTED FUNDING

Applied Research in Computing Enterprise Services (ARCES)
Source: U.S. Air Force, GCCS-AF, PE 33150F, 2005-2007
Through the Center of Excellence in Enterprise Technology (CEET)
Industry partner: Gestalt, LLC
Co-PI: Robert Beck, Villanova University
Amount: \$6.3 million contract, \$4.3 million funded

Plagiarism Detection and Research Writing Validation
Source: SIGCSE Special Projects Grant program, 2007
Amount: \$4,000

A Course on Service-Oriented Architecture Design and Analysis
 Source: Villanova Institute for Teaching and Learning (VITAL), 2007
 Co-PI: Vijay Gehlot, Villanova University
 Amount: \$8,000

Field Programmable Gate Array equipment & software license grants
 Sources: Altera Corporation, Xilinx Inc., 2005
 Amount: \$7,279

OTHER PROFESSIONAL EXPERIENCE

Software Engineer Blair Computing Systems, Inc. - Newark, DE <i>Software development for medical imaging and printing.</i>	1997-2002
Vice President - Product Development AgoraNet, Inc. - Newark, DE <i>Software development, Internet hosting and web design.</i>	1995-2002
Graduate Research & Teaching Assistant University of Delaware - Newark, DE <i>High Performance Computing Group (1996-1997)</i> <i>Applied Science & Engineering Labs (1994-1996)</i>	1994-1997
Computer Consultant Entertainment Industry - Los Angeles, CA <i>Independent consulting on a contract basis.</i>	1988-1994
Freelance Television Production Entertainment Industry - Los Angeles, CA	1984-1994

SERVICE

UNIVERSITY

- Information Literacy Outcomes Subcommittee of the University Outcomes Assessment Committee, 2004

COLLEGE

- Committee on Majors and Concentrations (CMC), 2007
- Premier Liberal Arts brainstorming focus group, College Strategic Planning Committee, 2007

DEPARTMENT

- Faculty advisor for Villanova University student chapter of the Association of Computing Machinery, 2006-present
- Class of 2010 Advisor, 2006-present
- MS in Software Engineering (MSSE) Committee, 2006-present
- Outreach Committee, 2005-present
- BS in Computer Science Curriculum Committee, 2002-present
- CS Zero Working Group, 2005-2006

- Revamping Operating Systems and Computer Organization (ROSCO) Committee, 2005-2006
- Undergraduate Admissions Committee, 2004-2006
- Class of 2006 Advisor, 2002-2006
- Supervised 42 graduate student independent study projects and one Master's Thesis
- Colloquium host for four guest speakers

PROFESSIONAL

- Local Arrangements Chair, Sixth IEEE International Workshop on Source Code Analysis and Manipulation Workshop of Twenty first IEEE International Conference on Software Maintenance (ICSM 2006), 2006
- Program committee member, WIE 2007 Conference, 2007
- Reviewer, 29th Conference of IEEE Engineering in Medicine and Biology Society, 2007
- Reviewer, SIGCSE Technical Symposium, 2004-2007
- Reviewer, ITICSE Conference, 2004-2007
- Referee, Software-Practice & Experience (SPE) journal, 2006
- Reviewer, McGraw-Hill textbook, 2004
- Reviewer, Oxford University Press textbook, 2004
- Reviewer, IASTED PDCS Conference, 2002
- Referee, IEEE Transactions on Rehabilitation Engineering, 1998-2000
- Participated in "HPC Network Simulation for the DoD" Electronics, Networking and Systems (ENS) training workshop, 2007
- Mentor for National Consortium for Specialized Secondary Schools of Mathematics, Science, and Technology (NCSSSMST) annual Student Research Symposium, 2005
- Continuing author of Dihydrogen Monoxide Research Division (DHMO.org) science satire and critical thinking website, used internationally by educators, 1997-present
- Board of Directors, AgoraNet, Inc., 1995-present
- Member, Association of Computing Machinery
- Member, Special Interest Group on Computer Science Education (SIGCSE)
- Software consultant and web site designer for a number of local not-for-profit organizations, schools and churches

HONORS

- Finalist (one of five), Villanova University "Last Lecture" faculty award, nominated by graduating senior class, 2005
- Runner-up, Best Paper Award, PACT 2000 Technical Conference, 2000
- Upsilon Pi Epsilon Computer Science Honor Society, 1998
- Alpha Epsilon Rho Broadcasting Honor Society, 1984

INVITED TALKS, WORKSHOPS & INTERVIEWS

"Magical Illusion for Science Education." Workshop tutorial, Villanova Magic School summer science camp, July 2007.

“Magic and Theater in Computing Education.” Workshop tutorial, Computer Science Education Summer Institute (CSESI), Haverford College, June 2007.

Invited guest speaker and panel member, Faculty Roles in Institutions of Higher Education course, University of Delaware, June 2007.

Interviewed on WGN Radio, Chicago, on the Nick Digilio Show, April 2007 about my technology literacy and critical thinking chapter in “South Park and Philosophy.”

“Using Magic to Teach Computer Science.” Workshop tutorial, SIGCSE Technical Symposium (SIGCSE 2007), March 2007.

“Magical Illusion for Science Education.” Workshop tutorial, Villanova Magic School summer science camp, July 2006.

“Internet Safety.” Invited speaker, Mothers of Multiples conference, March 2006.

Interviewed by Wilmington News Journal for July 30, 2005 front page article about my dihydrogen monoxide web site and its impact on critical thinking and education.

“Magical Illusion for Science Education.” Workshop tutorial, Villanova Magic School summer science camp, July 2005.

“Internet Safety.” Workshop presenter, 25th Annual Parenting Conference, Nursing Mothers, Inc., Newark, Delaware, March 2005.

Invited speaker and panel member, Faculty Roles in Institutions of Higher Education course, University of Delaware, June 2004.

Interviewed on NPR’s All Things Considered by Robert Siegel, March, 2004 about my dihydrogen monoxide web site and its impact on critical thinking.

PUBLICATIONS

Thomas Way, Tao Tao and Bryan Wagner. “Compiling Mechanical Nanocomputer Components.” *Nanotechnology*, 2007. *Submitted*.

Thomas Way and Richard Kheir. “Design of a Speech Recognition System to Assist Hearing Impaired Students in the Classroom.” *Assistive Technology*, 2007. *Submitted*.

Karen L. Hess, Mary-Angela Papalaskari, Randy Weinstein, Robert Styer, **Thomas Way** and Anthony Lagalante. “Special Session: Creation of the Milwaukee School of Magic.” 37th ASEE/IEEE Frontiers in Education Conference, Milwaukee, Wisconsin, October 10-13, 2007. *In Press*.

Mary-Angela Papalaskari, Karen L. Hess, Anthony Lagalante, Najib Nadi, Robert Styer, **Thomas Way** and Randy Weinstein. “Work in Progress: Engineering the Magic School - Creativity and Innovation in Context.” 37th ASEE/IEEE Frontiers in Education Conference, Milwaukee, Wisconsin, October 10-13, 2007. *In Press*.

Thomas P Way and Tao Tao. "Compiling a Mechanical Nanocomputer Adder." International Conference on Computer Design (CDES 2007), pages 171-177, June 26-28, 2007.

Richard Kheir and **Thomas Way**. "Inclusion of deaf students in computer science classes using real-time speech transcription." 12th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE 2007), Dundee, Scotland, pages 261-265, June 25-27, 2007.

Joseph Distasio and **Thomas P. Way**. "Inclusive computer science education using a ready-made computer game framework." 12th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE 2007), Dundee, Scotland, pages 116-120, June 25-27, 2007.

Elliot Sloane, **Thomas Way**, Vijay Gehlot, Anany Levitin and Robert Beck. "SoSE Modeling and Simulation Approaches to Evaluate Security and Performance Limitations of a Next Generation National Healthcare Information Network (NHIN-2)." IEEE System of Systems Conference, pages 1-6, San Antonio, Texas, April 16-18, 2007.

Elliot Sloane, **Thomas Way**, Vijay Gehlot, and Robert Beck. "Using Hybrid SoSE Approaches for Modeling and Validating Large Scale Service Oriented Architecture (SOA) System of Systems as Next-Generation Global Military Informatics Platforms with Colored Petri Nets (CPN) and Extend/MESA" IEEE System of Systems Conference, pages 1-6, San Antonio, Texas, April 16-18, 2007.

Elliot Sloane, Vijay Gehlot, Robert Beck and **Thomas Way**. "Conceptual SoS Model and Simulation Systems for a Next Generation National Healthcare Information Network (NHIN-2): Creating a Net-Centric, Extensible, Context Aware, Dynamic Discovery Framework for Robust, Secure, Flexible, Safe, and Reliable Healthcare." 2007 1st Annual IEEE Systems Conference, pages 1-6, Honolulu, Hawaii, April 9-12, 2007.

Elliot Sloane, **Thomas Way**, Vijay Gehlot, Robert Beck, James Solderitsch and Elzbieta Dziembowski. "A Hybrid Approach to Modeling and Validating a Large Scale SOA Systems of Systems Using CPN and MESA/Extend." 2007 1st Annual IEEE Systems Conference, pages 1-7, Honolulu, Hawaii, April 9-12, 2007.

Thomas Way, Kallie Nordengren, Mary-Angela Papalaskari, Sue Metzger, Najib Nadi, Robert Styer, Melissa Corning and Adam Stepe. "A Novel Service Learning Program with a Computer Science Foundation." Poster presentation, 38th SIGCSE Technical Symposium on Computer Science Education (SIGCSE 2007), March 2007.

Tom Way. Book chapter on technology literacy, critical thinking and psychic debunking, in "South Park and Philosophy," Edited by Richard Hanley, Open Court Publishing Company, Popular Culture and Philosophy Series, Vol. 26, pages 271-289, March 2007.

Vijay Gehlot, **Thomas Way**, Robert Beck and Peter DePasquale. "Model Driven Development of a Service Oriented Architecture (SOA) Using Colored Petri Nets." 1st Workshop on Quality in Modeling, ACM/IEEE 9th International Conference on Model Driven Engineering Languages and Systems (MoDELS 2006), pages 63-77, Genoa, Italy, October 1, 2006.

Joseph Distasio and **Thomas P. Way**. "Exploring Computer Science Concepts with a Ready-made Computer Game Framework." Technical Report cs/0609070, arXiv.org archive, 5 pages, 2006.

M.A. Papalaskari, Karen Hess, Debra Kossman, Sue Metzger, Alain Phares, Robert Styer, Connie Titone, **Thomas Way**, Randy Weinstein, Francis Wunderlich. "PIVOTS: Service Learning at the Science, Theatre & Magic Boundary." 36th ASEE/IEEE Frontiers in Education Conference, pages T2H:18-23, San Diego, October 28-31, 2006.

Thomas P. Way. "Compilation for Future Nanocomputer Architectures." 2006 International Conference on Computing in Nanotechnology (CNAN 2006), pages 251-257, Las Vegas, June 2006.

Bryan W. Wagner and **Thomas P. Way**. "MoIML: An Abstract Scripting Language for Assembly of Mechanical Nanocomputer Architectures." 2006 International Conference on Computing in Nanotechnology (CNAN 2006), pages 258-264, Las Vegas, June 2006.

Richard Khair, **Thomas Way**. "Improving Speech Recognition to Assist Real-time Classroom Note Taking." Rehabilitation Engineering and Assistive Technology Society of North America (RESNA 2006) Conference, electronic proceedings, 4 pages, Atlanta, Georgia, June 2006.

Thomas P. Way, Lori L. Pollock. "Demand-driven Inlining in a Region-based Optimizer for ILP Architectures." Technical report cs/0604043, arXiv.org archive, 23 pages, 2006.

Thomas P. Way. "A Virtual Laboratory Model for Encouraging Undergraduate Research." Proceedings of the 37th SIGCSE Technical Symposium on Computer Science Education (SIGCSE 2006), pages 203-207, Houston, Texas, March 2006.

Timothy M. White and **Thomas P. Way**. "jFAST: A Java Finite Automata Simulator." Proceedings of the 37th SIGCSE Technical Symposium on Computer Science Education (SIGCSE 2006), pages 384-388, Houston, Texas, March 2006.

Sebastian Niezgodna and **Thomas P. Way**. "SNITCH: a Software Tool for Detecting Cut and Paste Plagiarism." Proceedings of the 37th SIGCSE Technical Symposium on Computer Science Education (SIGCSE 2006), pages 51-55, Houston, Texas, March 2006.

Nicholas DiPasquale, Vijay Gehlot and **Thomas Way**. "Comparative Survey of Approaches to Automatic Parallelization." Mid-Atlantic Student Workshop on Programming Languages and Systems (MASPLAS), pages 5:1-5:6, Newark, Delaware, 2005.

Thomas Way. "A Company-Based Framework for a Software Engineering Course." Proceedings of the 36th SIGCSE Technical Symposium on Computer Science Education (SIGCSE 2005), St. Louis, Missouri, pages 132-136, February 2005.

Thomas Way, Ben Breech, Wei Du, and Lori Pollock. "Empirical Study of Region-based Partial Inlining." International Conference on Parallel and Distributed Computing Systems, pages 705-710, Cambridge, MA, November 2002.

Thomas Way, Ben Breech, Wei Du, and Lori Pollock. "A Region-based Partial Inlining Algorithm for an ILP Optimizing Compiler." International Conference on Parallel and Distributed Processing Techniques and Applications, pages 552-556, Las Vegas, Nevada, June 2002.

Thomas Way. "Procedure Restructuring for Ambitious Optimization." Ph.D. Dissertation. May 2002.

Thomas Way, Ben Breech, Wei Du, and Lori Pollock. "Demand-driven Inlining Heuristics in a Region-based Optimizing Compiler for ILP Architectures." In International Conference on Parallel and Distributed Computing and Systems, pages 90-95, Anaheim, California, 2001.

Thomas Way, Ben Breech, Wei Du, Ves Stoyanov and Lori Pollock. "Using Path-spectra-based Cloning in Region-based Optimization for Instruction-Level Parallelism." In 14th International Conference on Parallel and Distributed Computing Systems, pages 83-90, Richardson, Texas, 2001.

Thomas Way, Ben Breech and Lori Pollock. "Region Formation Analysis with Demand-driven Inlining for Region-based Optimization." In International Conference on Parallel Architectures and Compilation Techniques (PACT), pages 24-33, Philadelphia, Pennsylvania, 2000.

Tom Way, Ben Breech, Wei Du, Matt Bridges, Ves Stoyanov and Lori Pollock. "The DIRECT Project The Delaware Interprocedural REgion-based Compiler Toolset Project." Poster presentation. Mid-Atlantic Student Workshop on Programming Languages and Systems (MASPLAS), Newark, Delaware, 2000.

Matt Bridges, **Tom Way** and Lori Pollock. "The VIPeR Tool for Visualizing InterProcedural Regions in Compiler Research." Poster presentation. Mid-Atlantic Student Workshop on Programming Languages and Systems (MASPLAS), Newark, Delaware, 2000.

Thomas Way and Lori Pollock. "Using Path Spectra to Direct Function Cloning." In Workshop on Profile and Feedback Directed Compilation at International Conference on Parallel Architectures and Compilation Techniques, pages 40-47, Paris, France, 1998.

Thomas Way, Cheer-Sun Yang and Lori Pollock. "Potential Performance Enhancements of MIL-STD 188-220A Through Parallelism." 2nd Annual FedLab Symposium, ARL/ATIRP Consortium, pages 301-305, College Park, Maryland, 1998.

Thomas Way and Lori Pollock. "Towards Identifying and Monitoring Optimization Impacts." Mid-Atlantic Student Workshop on Programming Languages and Systems (MASPLAS), pages 1-11, New Paltz, New York, 1997.

Thomas Way and Kenneth Barner. "TACTICS: a Tactile Image Creation System." Rehabilitation Engineering and Assistive Technology Society of North America (RESNA), electronic proceedings, 3 pages, Pittsburgh, Pennsylvania, 1997.

Thomas Way and Kenneth Barner. "Automatic Visual to Tactile Translation, Part I: Human Factors, Access Methods and Image Manipulation." IEEE Transactions on Rehabilitation Engineering, pages 81-94, March, 1997.

Thomas Way and Kenneth Barner. "Automatic Visual to Tactile Translation, Part II: Evaluation of the TACTile Image Creation System." IEEE Transactions on Rehabilitation Engineering, pages 95-105, March, 1997.

Thomas Way. "Automatic Generation of Tactile Graphics." Master's Thesis. January, 1997.

Thomas Way and Kenneth Barner. "Towards Automatic Generation of Tactile Graphics." Rehabilitation Engineering and Assistive Technology Society of North America (RESNA), pages 161-163, Salt Lake City, Utah, 1996.

Jason Fritz, **Thomas Way** and Kenneth Barner. "Haptic Representation of Scientific Data for Visually Impaired or Blind Persons." 11th Annual CSUN Technology and Persons with Disabilities Conference, electronic proceedings, 5 pages, 1996.