David A. Furcy

Mail: University of Wisconsin Oshkosh
Computer Science Department
800 Algoma Boulevard
Oshkosh, WI 54901
Email: furcyd@uwosh.edu
Phone: (920) 424-1182
Fax: (920) 424-0045
Home page: http://www.uwosh.edu/faculty_staff/furcyd/

Professional Experience

Fall 2016—Present **University of Wisconsin, Oshkosh, WI**

- Professor, Computer Science Department

June 2015—Present **University of Wisconsin, Oshkosh, WI**

- Chair, Computer Science Department

June 2013—May 2015 **University of Wisconsin, Oshkosh, WI**

- Co-Chair, Computer Science Department

Fall 2011—Summer 2016 **University of Wisconsin, Oshkosh, WI**

- Associate Professor, Computer Science Department

Fall 2005—Fall 2011 **University of Wisconsin, Oshkosh, WI**

- Assistant Professor, Computer Science Department

Spring 2005 **Blackburn College, Carlinville, IL**

- Interim professor (one-semester sabbatical replacement), Computer Science Department

Teaching Experience

Fall 2005—Present **University of Wisconsin, Oshkosh, WI**

Courses taught:

- CS125 - Web Site Development (2 sections)
- CS142 - Elementary Programming in Visual Basic (3 sections)
- CS221 - Object-Oriented Design and Programming I (6 sections)
- CS251 - Computer Organization and Assembly Language (4 sections)
- CS262 - Object-Oriented Design and Programming II (1 section)
- CS271 - Data Structures (2 sections)
- CS300 - Artificial Intelligence (1 section)
- CS310 - Computer Architecture (2 sections)
- CS321 - File Structures (4 sections)
- CS326 - Computer Security (1 section)
- CS331 - Programming Languages (5 sections)
- CS381 - Theory of Computing (7 sections)
- CS391 - Data Communications and Computer Networks (1 section)
- CS399 - Internship in Computer Science (8 sections)
- CS421 - Operating Systems (1 section)
- CS431 - Compilers (6 sections)
- CS480 - Topics in Computing: Heuristic Search (1 section)
- CS490 - Practicum in Computer Science (8 sections)
- MATH212 - Mathematics for Computer Science (2 sections)

Spring 2005 **Blackburn College, Carlinville, IL**

Courses taught:

- CS212 - Paradigms (1 section)
- CS214 - Environments (1 section)
- CS440 - Theory of Computation (1 section)

Education

December 2004, Ph.D. in Computer Science **Georgia Institute of Technology, College of Computing, Atlanta, GA**

Dissertation: Speeding Up the Convergence of Online Heuristic Search and Scaling Up Offline Heuristic Search

Advisor: Dr. Sven Koenig

Major: Intelligent Systems *Minor:* Cognitive Science

July 1997, M.S. in Computer Science **University of Iowa, Computer Science Department, Iowa City, IA**

Thesis: Formal Description of and Experiments with Knuth-Bendix-Based Theorem Proving in OTTER

Advisor: Dr. Maria P. Bonacina

August 1994, M.S. in Computer Science **U.T.C., Department of Computer Engineering, Compiègne, France**

Diploma: French D.E.A. or "Diplôme d'Etudes Approfondies" from the Université de Technologie de Compiègne (U.T.C.)

Thesis: Real-Time Monitoring of Dynamical Systems with Temporal Scenarios (in French)

Advisors: Dr. Dominique Fontaine and Dr. Claudette Sayettat

July 1993, B.S. in Computer Science **U.T.C., Department of Computer Engineering, Compiègne, France**

Diploma: French "Diplôme d'Ingénieur" from the Université de Technologie de Compiègne (U.T.C.)

Major: Artificial Intelligence

Invited Publications

- D. Furcy and S. Koenig, *STRIPS*, Encyclopedia of Cognitive Science, London: Macmillan, 2002

Edited Proceedings

- D. Furcy, S. Koenig, W. Ruml, and R. Zhou (editors), *Proceedings of the AAAI-08 Workshop on Search in Artificial Intelligence and Robotics*, WS-08-10, AAAI Press, 2008

Conference Reports

- R. Bunescu, V. Carvalho, J. Chomicki, V. Conitzer, M. Cox, V. Dignum, Z. Dodds, M. Dredze, D. Furcy, E. Gabrilovich, M. Göker, H. Guesgen, H. Hirsh, D. Jannach, U. Junker, W. Ketter, A. Kobsa, S. Koenig, T. Lau, L. Lewis, E. Matson, T. Metzler, R. Mihalcea, B. Mobasher, J. Pineau, P. Poupart, A. Raja, W. Ruml, N. Sadeh, G. Shani, D. Shapiro, S. Singh, M. Taylor, K. Wagstaff, T. Smith, W. Walsh, and R. Zhou, *AAAI 2008 Workshop Reports, Artificial Intelligence Magazine*, Vol. 30(1), p. 108-118, 2009

Peer-Reviewed Publications

- D. Furcy and S.M. Summers, *Scaled Pier Fractals Do Not Strictly Self-Assemble*, Natural Computing, DOI: 10.1007/s11047-015-9528-z, 2015
- D. Furcy and S.M. Summers, *Optimal Self-Assembly of Finite Shapes at Temperature 1 in 3D*, Z. Lu et al. (Eds.); COCOA 2015, LNCS 9486; DOI: 10.1007/978-3-319-26626-8_11, p. 138-151, 2015

- G. Thomas, M. Zahm and D. Furcy, *Using a Sentence Compression Framework for the Summarization of Email Threads in an Archive*, Accepted at CCSC-Rocky Mountain Conference, 2015
- D. Furcy, S. Micka and S.M. Summers, *Optimal Program-Size Complexity for Self-Assembly at Temperature 1 in 3D*, A. Phillips and P. Yin (Eds); DNA 21 (21st International Conference on DNA Computing and Molecular Programming), LNCS 9211, p. 71-86, 2015
- K. Barth, D. Furcy, S.M. Summers and P. Totzke, *Scaled tree fractals do not strictly self-assemble*, O.H. Ibarra et al. (Eds); UCNC 2014, LNCS 8553; DOI: 10.1007/978-3-319-08123-6_3, p. 27-39, 2014
- C. Jenkins, A. Voss, and D. Furcy, *An Effective Educational Module for Booth's Multiplication Algorithm*, Journal of Computing Sciences in Colleges, Vol. 27(4), p. 54-62, Apr. 2012
- D. Furcy and D. Penniston, *Congruences for l-Regular Partition Functions Modulo 3*, Ramanujan Journal, Vol. 27 (1), p. 101-108, Jan. 2012; DOI 10.1007/s11139-011-9312-3
- D. Furcy and G. Thomas, *Designing Effective Heterogeneous Teams for Multiagent Routing Domains*, International Conference on Intelligent Agent Technology (IAT), p. 341-348, 2011
- M. Corliss, D. Furcy, J. Davis, and L. Pietraszek, *Bantam Java Compiler Project: Experiences And Extensions*, Journal of Computing Sciences in Colleges, Vol. 25(6), p. 159-166, Apr. 2010
- D. Furcy, *JHAVEPOP: Visualizing Linked-list Operations In C++ And Java*, Journal of Computing Sciences in Colleges, Vol. 25(1), p. 32-41, Oct. 2009
- D. Furcy, T. Naps, and J. Wentworth, *Sorting Out Sorting - The Sequel*, Thirteenth Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE), p. 174-178, 2008
- M. McNally, T. Naps, D. Furcy, S. Grissom, and C. Trefftz, *Supporting The Rapid Development of Pedagogically Effective Algorithm Visualizations*, Journal of Computing Sciences in Colleges, Vol. 23(1), p. 80-90, Oct. 2007
- D. Furcy, A. Jungwirth, and T. Naps, *BlockTree - Pedagogical Information Visualization for Heuristic Search*, Twentieth International FLAIRS Conference, p. 303-308, 2007
- R.C. Holte, A. Felner, J. Newton, R. Meshulam, and D. Furcy, *Maximizing Over Multiple Pattern Databases Speeds Up Heuristic Search*, Artificial Intelligence Journal, Vol. 170(16-17), p. 1123-1136, 2006
- D. Furcy and S. Koenig, *Limited Discrepancy Beam Search*, Nineteenth International Joint Conference on Artificial Intelligence (IJCAI), p. 125-131, 2005
- D. Furcy and S. Koenig, *Scaling Up WA* With Commitment And Diversity*, Nineteenth International Joint Conference on Artificial Intelligence (IJCAI), p. 1521-1522, 2005
- S. Koenig , M. Likhachev, Y. Liu, and D. Furcy, *Incremental Heuristic Search in AI*, Artificial Intelligence Magazine, Vol. 25(2), p. 99-112, Summer 2004
- S. Koenig, M. Likhachev, and D. Furcy, *Lifelong Planning A**, Artificial Intelligence Journal, Vol. 155(1-2), p. 93-146, 2004
- A. Felner, R. Holte, R. Meshulam, J. Newton, and D. Furcy, *Multiple Pattern Databases*, Fourteenth International Conference on Automated Planning and Scheduling (ICAPS), p. 122-133, 2004
- Y. Liu, S. Koenig, and D. Furcy, *Speeding Up The Calculation of Heuristics for Heuristic Search-Based Planning*, Eighteenth National Conference on Artificial Intelligence (AAAI), p. 484-491, 2002
- S. Koenig, D. Furcy, and C. Bauer, *Heuristic Search-Based Replanning*, Sixth International Conference on Artificial Intelligence Planning and Scheduling (AIPS), p. 294-301, 2002
- D. Furcy and S. Koenig, *Combining Two Fast-Learning Real-Time Search Algorithms Yields Even Faster Learning*, Sixth European Conference on Planning (ECP), 2001
- D. Furcy and S. Koenig, *Speeding Up The Convergence of Real-Time Search*, Seventeenth National Conference on Artificial Intelligence (AAAI), p. 891-897, 2000

Submissions under review

- D. Furcy, S. Micka and S.M. Summers, *Optimal Program-Size Complexity for Self-Assembled Squares at Temperature 1 in 3D*, Submitted to Algorithmica, October 5, 2015

Grants

External Grants

- NSF IUSE Program, Co-Principal-Investigator, with Tom Naps (UWO),
  Collaborative Research: Assessment and Expanding the Impact of OpenDSA, an Open Source, Interactive eTextbook for Data Structures and Algorithms
  Award #DUE-1431399, $99,903 January 1, 2015 - December 31, 2017
- NSF REU (Research Experiences for Undergraduates), Co-Principal-Investigator, with Tom Naps (UWO),
  Exploring Open Source Software: Development and Efficacy of Online Learning Environments
  in Computer Science, Award # CNS-0851569, $261,167.00 July 1, 2009—June 30, 2012
- NSF, Co-Principal-Investigator, with Sven Koenig (University of Southern California), Wheeler Ruml (University of New Hampshire), and Rong Zhou (Palo Alto Research Center), A Symposium Series on Heuristic Search and Its Applications, Award # IIS-0831035, $14,646.00 June 1, 2008—May 5, 2009
- NSF Stipend, Visualization of Pointer Operations in Linked Lists for Use in a Data Structures Course, $2,000.00 2007—2008
- NSF Stipend, Algorithm Visualization of Operations on One-Dimensional Arrays in CS1, $1,000.00 2006

UWO Grants

- UWO Faculty Development Board – Teaching Component, with Z. Benzaid and H. Moghadam (UWO Mathematics Department), 15% CAS for D. Furcy and $400 auxiliary support 2008
- UWO Faculty Development Board – Undergraduate Student and Faculty Collaborative Research, $3,000 2007
- UWO Faculty Development Board – Off-Campus Component, $902.00 2007
- UWO Faculty Development Board – Small Grant Component, $400.00 2006

Memberships and Service

Memberships

Member of the Association for the Advancement of Artificial Intelligence (A.A.A.I.) 1999—Present
Member of the Association for Computing Machinery (A.C.M.) 2004—Present
Member of the Special Interest Group on Computer Science Education (A.C.M./SIGCSE) 2004—Present
Member of the Special Interest Group on Artificial Intelligence (A.C.M./SIGART) 2004—Present

Service to the Artificial Intelligence and Computer Science Education Research Communities

Program Committee Member, Sixth Symposium on Educational Advances in Artificial Intelligence (EAAI-2016) 2016
Scholarship Committee Member, Grace Hopper Celebration (GHC) of Women In Computing Conference 2015
Program Committee Member, Fifth Annual Symposium on Combinatorial Search 2012
Program Committee Member, Twenty-Fourth International FLAIRS Conference (FLAIRS-11, Special Track on AI Education) 2011
Program Committee Member, Twenty-Third International FLAIRS Conference (FLAIRS-10, Special Track on AI Education) 2010
Program Committee Member, Third Annual Symposium on Combinatorial Search 2010
Program Committee Member, Twenty-First International Joint Conference on Artificial Intelligence (IJCAI-09) 2009
Program Committee Member, Twenty-Second International FLAIRS Conference (FLAIRS-09, Special Track on AI Education) 2009

Co-Founder, Co-Organizer, and Co-Chair, with S. Koenig, W. Ruml, and R. Zhou,
First International Symposium on Search Techniques in Artificial Intelligence and Robotics 2008

Program Committee Member, Twenty-Third Conference on Artificial Intelligence (AAAI-08, Nectar Program) 2008

Program Committee Member, Twenty-First International FLAIRS Conference (FLAIRS-08, Special Track on AI Education) 2008

Program Committee Member, Twenty-Second Conference on Artificial Intelligence (AAAI-07) 2007

Program Committee Member, Workshop on Heuristic Search, co-located with AAAI-06 2006

Program Committee Member, Twenty-First Conference on Artificial Intelligence (AAAI-06) 2006

Reviewer for Textbook Publishers, Research Journals, Conferences, and Funding Agencies

Conference Paper Reviewer, CCSC-Mid-West 2016

Conference Paper Reviewer, EAAI-16 2016

Conference Paper Reviewer, CCSC-North-East 2015

Conference Paper Reviewer, CCSC-Mid-West 2014

Conference Paper Reviewer, CCSC-Mid-West 2012

Conference Paper Reviewer, SoCS-12 2012

Conference Paper Reviewer, CCSC-MW-12 2012

Panel Member and Reviewer, NSF IIS Panel, Division of Information & Intelligent Systems 2010

Conference Paper Reviewer, FLAIRS-10/Special Track on AI Education 2010

Journal Paper Reviewer, Journal of Artificial Intelligence Tools 2010

Conference Paper Reviewer, SoCS-10 2010

Conference Paper Reviewer, FLAIRS-09/Special Track on AI Education 2009

Conference Paper Reviewer, IJCAI-09 2009

Conference Paper Reviewer, AAAI-08/Nectar Program 2008

Journal Paper Reviewer, Journal of AI Research 2008

Conference Paper Reviewer, IJCAI-07 2007

Conference Paper Reviewer, AAAI-07 2007

Book chapter Reviewer, McGraw-Hill 2007

Conference Paper Reviewer, AAAI-06 2006

Conference Paper Reviewer, Heuristic Search Workshop 2006

Journal Paper Reviewer, Artificial Intelligence Journal 2006

Journal Paper Reviewer, Journal of Artificial Intelligence Tools 2005

Service to the Department, College, Campus and Community

Chair, Computer Science Department 2015—Present

Founder and Leader, Junior Computer Science Club 2015—Present

Research and Teaching Panelist, Faculty Development Board 2014—Present

Committee Member, COLS Curriculum Committee 2014—Present

Organizer and Host, Hour-of-code sessions 2014—Present

Computer Science Faculty Liaison, CAPP 2013—Present

Reviewer, Oshkosh Scholar 2008—Present

Panel Member, Student Faculty Collaborative Research Program, Faculty Development Board 2008—Present

Committee Member, Computer Science Faculty Hiring Committee 2005—Present

Exhibitor, Titan Preview Academic Fair July 11-12, 2016

Host, Career and Life Path Days (8th graders) April 19-21, 2016

Presenter, Career Exploration Fair for 8th graders at Oshkosh West March 10, 2016

Volunteer, Science Safari November 2015

Co-Chair, Computer Science Department 2013—2015

Committee Member, Academic Computing User Group (ACUG) 2010—2015

Library Liaison, Computer Science Liaison to the UWO Library Representative 2006—2012
Founder and Director, Computer Science Robotics Laboratory 2009—2011
Exhibitor and Robotics Movie Editor, Preview Day/Major Fest 2010
Committee Member, Faculty Senate Improvement of Instruction Committee 2008—2010
Working Group Member, Textbook Cost Working Group 2007—2010
Committee Member, Computer Science Assessment Committee 2006—2010
Panelist and Programming Activity Leader, Computer Science Open House 2009
Judge, Association for Computing Machinery, International Collegiate Programming Contest 2008—2009
Panelist, Computer Science Open House 2008
Council Member, Undergraduate Research Advisory Council 2007—2008
Computer Science Outreach Program Co-Organizer, with T. Naps, Visits to Fox Valley and Madison area high-schools 2006—2008
Activity Leader, UWO Science Outreach Summer Day Camp 2007
Workshop Leader, UWO Science Safari for Girls 2007
UWO Site Director and Coach, Association for Computing Machinery, International Collegiate Programming Contest 2007
Exhibitor and Robotics Movie Editor (Won Second Place Prize for Best Booth), Preview Day/Major Fest 2007
Webmaster and Committee Member, Computer Science Web Site Committee 2005—2007
Judge, Association for Computing Machinery, International Collegiate Programming Contest 2006