

David A. Furcy

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Professional Experience

Fall 2016—Present <ul style="list-style-type: none">• Professor, Computer Science Department	University of Wisconsin, Oshkosh, WI
June 2015—June 2018 <ul style="list-style-type: none">• Chair, Computer Science Department	University of Wisconsin, Oshkosh, WI
June 2013—May 2015 <ul style="list-style-type: none">• Co-Chair, Computer Science Department	University of Wisconsin, Oshkosh, WI
Fall 2011—Summer 2016 <ul style="list-style-type: none">• Associate Professor, Computer Science Department	University of Wisconsin, Oshkosh, WI
Fall 2005—Fall 2011 <ul style="list-style-type: none">• Assistant Professor, Computer Science Department	University of Wisconsin, Oshkosh, WI
Spring 2005 <ul style="list-style-type: none">• Interim professor (one-semester sabbatical replacement), Computer Science Department	Blackburn College, Carlinville, IL

Teaching Experience

Fall 2005—Present <p>Courses taught:</p> <ul style="list-style-type: none">• 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 (6 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)• CS321 - Algorithms (2 sections)• CS326 - Computer Security (2 sections)• CS331 - Programming Languages (7 sections)• CS346 - Web Software Development (1 section)• CS381 - Theory of Computing (9 sections)• CS391 - Data Communications and Computer Networks (2 sections)• CS399 - Internship in Computer Science (12 sections)• CS421 - Operating Systems (1 section)• CS431 - Compilers (7 sections)• CS480 - Topics in Computing: Heuristic Search (1 section)• CS490 - Practicum in Computer Science (12 sections)• MATH212 - Mathematics for Computer Science (2 sections)	University of Wisconsin, Oshkosh, WI
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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 AAI-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, S.M. Summers and C. Wendlandt, *New Bounds on the Tile Complexity of Thin Rectangles at Temperature-1*, C. Thachuk and Y. Liu (Eds); DNA 25 (25th International Conference on DNA Computing and Molecular Programming), LNCS 11648, p. 100-119, DOI: 10.1007/978-3-030-26807-7, 2019
- D. Furcy and S.M. Summers, *Optimal Self-Assembly of Finite Shapes at Temperature 1 in 3D*, Algorithmica, Vol. 80(6), p. 1909-1963, 10.1007/s00453-016-0260-6, June 2018

- D. Furcy and S.M. Summers, *Scaled Pier Fractals Do Not Strictly Self-Assemble*, Natural Computing, Vol. 16(2), p. 317-338, DOI: 10.1007/s11047-015-9528-z, June 2017
- D. Furcy, S. Micka and S.M. Summers, *Optimal Program-Size Complexity for Self-Assembled Squares at Temperature 1 in 3D*, Algorithmica, Vol. 77(4), p. 1240-1282, DOI 10.1007/s00453-016-0147-6, April 2017
- 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

Grants

External Grants

- UW System Innovation Fund, Co-Principal-Investigator, with M. Eierman, J. Iversen, C. McDermott, and B. Rau, Increasing Graduates in Information Technology Fields
Award: \$56,000 FY 2018—FY 2019
- 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

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

<i>Program Committee Member</i> , Ninth Symposium on Educational Advances in Artificial Intelligence (EAAI-2019)	2019
<i>Program Committee Member</i> , Eighth Symposium on Educational Advances in Artificial Intelligence (EAAI-2018)	2018
<i>Program Committee Member</i> , Seventh Symposium on Educational Advances in Artificial Intelligence (EAAI-2017)	2017
<i>Program Committee Member</i> , Sixth Symposium on Educational Advances in Artificial Intelligence (EAAI-2016)	2016
<i>Scholarship Committee Member</i> , Grace Hopper Celebration (GHC) of Women In Computing Conference	2015
<i>Program Committee Member</i> , Fifth Annual Symposium on Combinatorial Search	2012
<i>Program Committee Member</i> , Twenty-Fourth International FLAIRS Conference (FLAIRS-11, Special Track on AI Education)	2011
<i>Program Committee Member</i> , Twenty-Third International FLAIRS Conference (FLAIRS-10, Special Track on AI Education)	2010
<i>Program Committee Member</i> , Third Annual Symposium on Combinatorial Search	2010
<i>Program Committee Member</i> , Twenty-First International Joint Conference on Artificial Intelligence (IJCAI-09)	2009
<i>Program Committee Member</i> , 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-Central-Plains 2019
Conference Paper Reviewer, CCSC-Central-Plains 2018
Conference Paper Reviewer, CCSC-Mid-West 2018
Conference Paper Reviewer, CCSC-Central-Plains 2017
Conference Paper Reviewer, CCSC-North-East 2017
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

Committee Member, Computer Science Curriculum Committee 2018—Present
Committee Member, COLS Tenure and Renewal Committee 2017—2019
Committee Member, USP Council on Nature 2016—Present
Research and Teaching Panelist, Faculty Development Board 2014—Present
Committee Member, COLS Curriculum Committee 2014—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

<i>Founder and Leader, Junior Computer Science Club</i>	2015—2019
<i>Programming Activity Leader, Mathematical Problem Solving Contest, UWO</i>	April 23, 2019
<i>Host, Job Shadow Career Pathway Days for OASD 8th Graders, UWO</i>	March 5 & 7, 2019
<i>Host, Computer Science Open House, Academic Open House Week, UW Oshkosh</i>	February 18, 2019
<i>Chair, Computer Science Department</i>	2015—2018
<i>Presenter, "Programming in OpenSCAD for 3D Modeling and Printing", Computer Science Club, UWO</i>	November 15, 2018
<i>Co-founder and co-host, Tech Titans - App development summer academy for girls entering grades 6 through 10, UWO</i>	July 31—August 2 2018
<i>Programming Activity Leader, Mathematical Problem Solving Contest, UWO</i>	April 24, 2018
<i>Host, Job Shadow Career Pathway Days for OASD 8th Graders, UWO</i>	March 6, 2018
<i>Host, Computer Science Open House, Academic Open House Week, UW Oshkosh</i>	February 13, 2018
<i>CAPP Presenter, Course Selection Night, Muskego High School, WI</i>	January 24, 2018
<i>Reviewer, 4imprint Information Technology Scholarship, UWO</i>	December 2017
<i>Reviewer, Dr. Ronald Akin Scholarship, UWO</i>	December 2017
<i>Panelist, Amplify CollaborateIT Conference, Collaboration Works - Education and Careers panel</i>	November 14, 2017
<i>Guest Speaker on IT Education, NEW IT Alliance Meeting</i>	November 9, 2017
<i>Committee Member, Faculty Hearings Sub-Committee, UWO</i>	Spring 2017
<i>Programming Activity Leader, Mathematical Problem Solving Contest, UWO</i>	April 25, 2017
<i>Reviewer, Dr. Ronald Akin Scholarship, UWO</i>	March 2017
<i>Host, Career and Life Path Days for OASD 8th Graders, UWO</i>	March 21-22, 2017
<i>Organizer and Host, Hour-of-code sessions</i>	2014—2016
<i>Computer Science Faculty Liaison, CAPP</i>	2013—2016
<i>Presenter, Career Exploration Fair for OASD 8th Graders, Oshkosh West</i>	October 25, 2016
<i>Workshop Presenter, Wisconsin Science Festival, UWO</i>	October 22, 2016
<i>Exhibitor, Titan Preview Academic Fair, UWO</i>	July 11-12, 2016
<i>Host, Career and Life Path Days for OASD 8th Graders, UWO</i>	April 19-21, 2016
<i>Presenter, Career Exploration Fair for OASD 8th Graders, Oshkosh West</i>	March 10, 2016
<i>Volunteer, Science Safari</i>	November 2015
<i>Co-Chair, Computer Science Department</i>	2013—2015
<i>Committee Member, Academic Computing User Group (ACUG)</i>	2010—2015
<i>Library Liaison, Computer Science Liaison to the UWO Library Representative</i>	2006—2012
<i>Founder and Director, Computer Science Robotics Laboratory</i>	2009—2011
<i>Exhibitor and Robotics Movie Editor, Preview Day/Major Fest</i>	2010
<i>Committee Member, Faculty Senate Improvement of Instruction Committee</i>	2008—2010
<i>Working Group Member, Textbook Cost Working Group</i>	2007—2010
<i>Committee Member, Computer Science Assessment Committee</i>	2006—2010
<i>Panelist and Programming Activity Leader, Computer Science Open House</i>	2009
<i>Judge, Association for Computing Machinery, International Collegiate Programming Contest</i>	2008—2009
<i>Panelist, Computer Science Open House</i>	2008
<i>Council Member, Undergraduate Research Advisory Council</i>	2007—2008
<i>Computer Science Outreach Program Co-Organizer, with T. Naps, Visits to Fox Valley and Madison area high-schools</i>	2006—2008
<i>Activity Leader, UWO Science Outreach Summer Day Camp</i>	2007

<i>Workshop Leader, UWO Science Safari for Girls</i>	2007
<i>UWO Site Director and Coach, Association for Computing Machinery, International Collegiate Programming Contest</i>	2007
<i>Exhibitor and Robotics Movie Editor (Won Second Place Prize for Best Booth), Preview Day/Major Fest</i>	2007
<i>Webmaster and Committee Member, Computer Science Web Site Committee</i>	2005—2007
<i>Judge, Association for Computing Machinery, International Collegiate Programming Contest</i>	2006