Kevin A. Wortman

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Education

University of California, Irvine, Ph.D., Information and Computer Science, 2009
Advisor: David Eppstein

University of California, Irvine, M.S., Information and Computer Science, 2004
Concentration: Algorithms and Data Structures

University of Massachusetts, Amherst, B.S., *cum laude,* 2002
Majors: Computer Science, Mathematics

Academic Employment

Associate Professor, Department of Computer Science, CSU Fullerton, 2015 – present

Assistant Professor, Department of Computer Science, CSU Fullerton, 2009 – 2015

Research Assistant, Department of Computer Science, UC Irvine, under David Eppstein, Fall 2008

Teaching Assistant, Donald Bren School of Info. and Computer Sciences, UC Irvine, 2003–2005

Summer Research Staff, MIT Lincoln Laboratory, Lexington, Massachusetts, Summer 2002

Undergraduate Research Assistant, Laboratory for Advanced Software Engineering Research, Amherst, Massachusetts, June 2000 to December 2001

Industry Employment

Engineering Co-Op, Unisys, Mission Viejo, California, 2008–2009

Engineering Intern, Google, Mountain View, California, 2005–2007

Intern, Tektronix, Chelmsford, Massachusetts, 1997–1999

Publications

Invited Journal Articles (peer reviewed)

I-1. J. Augustine, D. Eppstein and K. A. Wortman, *Approximate Weighted Farthest Neighbors and Minimum Dilation Stars,* Discrete Mathematics, Algorithms and Applications (DMAA), v. 2, i. 4, pp. 553-565, DOI: 10.1142/S17938309100008872010, 2010. Preliminary version listed as C-4.

I-2. D. Eppstein and K. A. Wortman, *Minimum Dilation Stars,* Computational Geometry: Theory and Applications, v. 37, i. 1, pp. 27-37, 2007. Preliminary version listed as C-7.

Journal Articles (peer reviewed)

J-1. D. Eppstein and K. A. Wortman, *Optimal Angular Resolution for Face-Symmetric Drawings*, J. Graph Algorithms and Applications (JGAA), v. 15, i. 4, pp. 551-564, 2011.

Conference Proceedings (peer reviewed)

C-1. J.R. Richardson and K. A. Wortman, *Street Scanner Geo-Location,* 21st Intelligent Transport Systems World Congress (IST 2014), Detroit, Michigan, 2014.

C-2. P. Danaee, K. A. Wortman, S. X. Wang, *Pseudoknotted RNA Secondary Structure Detection Using Artificial Neural Network,* 9th International Symposium on Bioinformatics Research and Applications (ISBRA 2013), Charlotte, North Carolina, 2013.

C-3. J. M. White and K. A. Wortman, *Divide-and-Conquer 3D Convex Hulls on the GPU,* 24th Canadian Conference on Computational Geometry (CCCG 2012), Prince Edward Island, Canada, 2012, pp. 137-142.

C-4. J. Augustine, D. Eppstein and K. A. Wortman, *Approximate Weighted Farthest Neighbors and Minimum Dilation Stars*, 16th International Computing and Combinatorics Conference (COCOON 2010), Nha Trang, Vietnam. Final version listed as I-1.

C-5. M. Dickerson, D. Eppstein and K. A. Wortman, *Dilation, Smoothed Distance, and Minimization Diagrams of Convex Functions*, 7th Int. Symp. Voronoi Diagrams in Science and Engineering (ISVD 2010), Quebec City, Canada, pp. 13-22.

C-6. D. Eppstein and K. A. Wortman, *Optimal Embedding Into Star Metrics,* Algorithms and Data Structures Symposium (WADS), Banff, Canada (best paper co-award). Lecture Notes in Comp. Sci. 5664, 2009, pp. 290-301.

C-7. D. Eppstein and K. A. Wortman, *Minimum Dilation Stars,* ACM Symposium on Computational Geometry (SoCG), Pisa, Italy, 2005, pp. 321-326. Final version listed as I-2.

Conference Presentations (peer reviewed)

P-1. J. Clay and K. A. Wortman, *A Durable Flash Memory Search Tree,* 3rd International Conference on Computational Sustainability (CompSust'12), Copenhagen, Denmark, 2012.

Teaching

Courses Taught — CSU Fullerton

1. CPSC 120 Introduction to Programming: Fall 2012, Spring 2012, Fall 2011, Spring 2011, Fall 2010, Spring 2010, Fall 2009
2. CPSC 131 Data Structures Concepts: Fall 2016, Spring 2016, Fall 2015, Spring 2013, Fall 2013
3. CPSC 223C C Programming: Spring 2015
4. CPSC 254 Unix and Open Source Software: Spring 2011, Spring 2010
5. CPSC 305 Coding for Artists: Fall 2017
6. CPSC 335 Algorithm Engineering: Fall 2017, Summer 2015, Spring 2015, Fall 2014, Summer 2014, Spring 2014, Summer 2013, Spring 2013, Summer 2012, Spring 2012, Summer 2011, Spring 2011, Summer 2010, Spring 2010, Fall 2009
7. CPSC 433 Data Security and Encryption: Summer 2012
8. CPSC 439 Theory of Computation: Fall 2016, Fall 2015, Fall 2014, Spring 2012
9. CPSC 452 Cryptography: Summer 2017, Summer 2012
10. CPSC 481 Artificial Intelligence: Fall 2013
11. CPSC 484 Principles of Computer Graphics: Spring 2016
12. CPSC 597 Graduate Project: Fall 2011

Courses Proposed

1. CPSC 223C C Programming, first offered Spring 2015
2. CPSC 223P Python Programming, co-proposer, first offered Fall 2012
3. CPSC 305 Coding For Artists, first offered Fall 2017
4. CPSC 439 Theory of Computation, first offered Fall 2014

Teaching Assistant Experience — UC Irvine

1. Honors Intro. to CS I (H21): Fall 2005
2. Honors Intro. to CS II (H22): Winter 2004
3. Honors Intro. to CS III (H23): Winter 2003, Spring 2004
4. Engineering Data Structures (160E): Spring 2003
5. Formal Languages and Automata (162): Fall 2003

Advising

Masters Theses Advised

1. Mohammed Alfraihi, *Improving the Standard Ant Clustering Algorithm Using Genetic Algorithms*, Fall 2013

2. Hussein Altabrawee, *3D Convex Hull Algorithms in the MapReduce Model (tentative title)*, Fall 2013

3. Brian Croner, *Offline Intelligent Lossless Compression of Hyperlinked Documents*, Spring 2012

4. James Clay, *An Efficient Multi-Level Flash Data Structure,* Fall 2011

5. Mihai Marinescu, *Wear-Resistant Flash Hash Tables*, Fall 2011

6. David Luu, *Numerical Methods in Prime Factorization: To Find or not to Find a Prime*, Summer 2010

Masters Projects Advised

1. Dana Toribio, *Curriculum Graph Visualizer,* Spring 2016

2. Gary Tse, *Graphics Software Tool Plugin based on Skeleton Extraction from a Closed Polygon Mesh,* Spring 2016

3. Colin Poan, *Creating an OLAP Data Warehouse from a Real-World OLTP Database in Order to Increase Data Extract Performance*, Fall 2015

4. Nicholas Smith, *CombinoChord: A Guitar Chord Generator App*, Fall 2015

5. Rodrigo Bryan Gonzalez Sr., *CryptoLock,* Fall 2014

6. John Saxton, *Automated C++ Grading Application,* Spring 2014

7. Yasaman Shahmohammad, *Computational Geometry Algorithms for 3D Printing Applications (tentative title),* Spring 2014

8. Yousef Aloumi, *Arabic Optical Character Recognition Mobile Application*, Fall 2013

9. Toan Nguyen, *Street Scanner Phase 1,* Fall 2013

10. Paul Parker, *Compress Wikipedia: Text Compression Optimizations via the Christophides Approximation Algorithm for the Travelling Salesman Problem,* Spring 2013

11. Leon Smith II, *Medical SMS Expert System,* Spring 2013

12. Brenda Griffith, *A Developers Checklist for White Box Testing: A Human Factors Perspective*, Spring 2012

13. Alejandro Alvarenga, *Design and Implementation of a Secure Role Access Control Web Based Healthcare Credentialing Tracking System for the Cal State Fullerton Health Center*, Fall 2011

14. Aseel Ashoor, *C++ Parallel Skip List Implementation,* Fall 2011

15. Brian Badal, *Automated Data Extraction From Remote Database*, Fall 2011

16. Arunkumar Chandrasekaran, *Implement a Dynamic Programming Algorithm for Matrix Chain Multiplication Using MapReduce*, Fall 2011

17. Dena Fitzgerald, *Baby Record iPhone Application*, Fall 2011

18. Christa McCarthy, *Neural Networks as a Blog Comment Spam Filter,* Fall 2011

19. Jaydeep Patel, *Hybrid Classifier: A Clustered Decision Tree,* Fall 2011

20. Bhavana Sudharshan, *A Demonstration of the "Categorization of Web Documents Using Extraction Ontologies" Approach for Mobile Phones Application Domain*, Fall 2011

Funding

Funded Awards

1. *Street Scanner,* Raytheon Company, PI, 2013, $25,000.
2. *Funding My Research: A Grant Writing Series,* 2012, $1,000.
3. *Promoting Undergraduate Research Experiences (PURE) Grant Program*, 2011, $1,000.

Unfunded Proposals

1. *Enhanced Programming Curriculum for the Retention of Computer Science and Computer Engineering Students,* Association of American Colleges & Universities, co-PI, 2014.
2. *Ensuring Student Success in Engineering and Computer Science (ESSECS),* National Science Foundation, co-PI, 2012.
3. *Proposal for Development of a CCOS Archive,* Central California Ozone Study, PI, 2011.
4. *Signal and Image Processing,* IEEE Real-World Engineering Projects (RWEP), co-PI, 2010.

Service

University Service

1. Supplemental Instruction (SI) Department Liason, AY 2013-2014 to present
2. NIH BRAD Steering Committee, AY 2013-2014 to present
3. SafeSpace Ally, CSU Fullerton Multicultural Leadership Center, 2009-present
4. Judge, on-campus selection for the CSU System-wide Research Competition, Spring 2012
5. Promoting Undergraduate Research Experiences Committee (PURE), AY 2010-2011

College Service

1. Commencement Committee, AY 2012-2013, 2011-2012, 2010-2011, 2009-2010

Department Service

1. Undergraduate Program Coordinator, AY 2014-2015
2. Graduate Program Committee, AY 2014-2015
3. Faculty Search Committee, AY 2013-2014, 2014-2015
4. ACM Student Chapter Advisor, AY 2011-2012 to present

5. Chair of the Chair Election Committee, AY 2011-2012

6. Executive Committee, AY 2010-2011, AY 2012-2013

7. Undergraduate Program Committee, AY 2009-2010 to present

Workshops and Roundtables

1. *Issues in Educating Veteran Engineers: A Multi-Institution Workshop Exploring Best Practices in Educating Veterans,* University of San Diego, June 15, 2010

2. *Department of Defense Roundtable: A Hispanic Engineering, Science, and Technology Week (HES-TEC) 2009 Activity,* University of Texas Pan-American, September 29, 2009

Media Coverage

1. Pearson Higher Education, *MyProgrammingLab: A Success Story,* `http://myprogramminglab.com/success-stories/profiles-of-mpl-users.html`.

2. The Pollak Library Blog, *Dr. Wortman's top resources for trends in Computer Science,* invited guest post, December 2010, `http://libphp2006.fullerton.edu/blogs/news/2010/12/02/dr-wortmans-top-resources-for-trends-in-computer-science/`.

Reviewer, 2013 ACM-ICPC North America Qualifier Contest, *Open Data Structures* (textbook), IEEE Transactions on Education

External Reviewer, Scheme R7RS Working Group 2, J. Algorithms, ACM TALG, ISAAC 2008

Associated Graduate Students, UC Irvine, Council Representative, School of Information and Computer Science, AY 2004-2005 and AY 2006-2007

Awards

Faculty Recognition: Outstanding Teaching, CSU Fullerton, March 2014

Faculty Recognition: Scholarly & Creative Activity, CSU Fullerton, March 2013

Outstanding Educator of the Year (College of ECS), Associated Students Inc., AY 2012-2013

Carol Barnes Excellence in Teaching Award Nominee, February 2011

Faculty Recognition: Scholarly & Creative Activity, CSU Fullerton, April 2010

Best Paper Award, Algorithms and Data Structures Symposium (WADS) 2009, for *Optimal embedding into star metrics;* Sponsored by Springer Verlag

Graduate Assistance In Areas Of National Need (GAANN) Fellow, 2004-2005 academic year

UMass Amherst Computer Science Talent Advancement Program, 1998-1999 academic year

Affiliations

Association of Computing Machinery (ACM)

Technical Skills

Programming Languages

- Expert: C, C++, LaTex, Python, Scheme
- Proficient: C#, Haskell, Java
- Familiar: BASIC, Bash, Common Lisp, Eiffel, i386 Assembly, Javascript, OpenCL, Reason ML, Z80 Assembly