

## Kevin A. Wortman

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## Education

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**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

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**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

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

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

**Intern**, Tektronix, Chelmsford, Massachusetts, 1997–1999

## Publications

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### 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 (COCON 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.

### Standards Documents (peer reviewed)

- S-1. K. A. Wortman and J. Cowan, *SRFI 134: Immutable Deques*, Scheme Requests for Implementation, 2016, <https://srfi.schemers.org/srfi-134/>

### Poster Presentations (peer reviewed)

- P-1. K. Torres and K. A. Wortman, *The Hills are Designed with the Sound of Music*, CSUF ECS Student Projects Showcase and Awards, 2019.
- P-2. J. Clay and K. A. Wortman, *A Durable Flash Memory Search Tree*, 3rd International Conference on Computational Sustainability (CompSust'12), Copenhagen, Denmark, 2012.

## Teaching

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### Courses Taught — CSU Fullerton

1. CPSC 120 Introduction to Programming: Fall 2019, Fall 2018, 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 2018, Fall 2017
6. CPSC 335 Algorithm Engineering: Summer 2019, Spring 2019, Fall 2018, Summer 2018, Spring 2018, 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 2019, Spring 2018, Spring 2016
12. CPSC 535 Advanced Algorithms: Fall 2019, Spring 2019
13. CPSC 597 Graduate Project: Fall 2011

### Courses Developed

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
5. CPSC 535 Advanced Algorithms, first offered Spring 2019

### 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

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### 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. Elizabeth Tsan, *Radically Different,,* Fall 2019
2. Swati Swahoo, *Private Cloud Computing*, Summer 2019
3. Nishant Rathi, *Code Runner*, Spring 2018
4. Dana Toribio, *Curriculum Graph Visualizer*, Spring 2016
5. Gary Tse, *Graphics Software Tool Plugin based on Skeleton Extraction from a Closed Polygon Mesh*, Spring 2016
6. Colin Poan, *Creating an OLAP Data Warehouse from a Real-World OLTP Database in Order to Increase Data Extract Performance*, Fall 2015
7. Nicholas Smith, *CombinoChord: A Guitar Chord Generator App*, Fall 2015
8. Rodrigo Bryan Gonzalez Sr., *CryptoLock*, Fall 2014
9. John Saxton, *Automated C++ Grading Application*, Spring 2014
10. Yasaman Shahmohammad, *Computational Geometry Algorithms for 3D Printing Applications (tentative title)*, Spring 2014
11. Yousef Aloumi, *Arabic Optical Character Recognition Mobile Application*, Fall 2013
12. Toan Nguyen, *Street Scanner Phase 1*, Fall 2013
13. Paul Parker, *Compress Wikipedia: Text Compression Optimizations via the Christophides Approximation Algorithm for the Travelling Salesman Problem*, Spring 2013
14. Leon Smith II, *Medical SMS Expert System*, Spring 2013

15. Brenda Griffith, *A Developer's Checklist for White Box Testing: A Human Factors Perspective*, Spring 2012
16. 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
17. Aseel Ashoor, *C++ Parallel Skip List Implementation*, Fall 2011
18. Brian Badal, *Automated Data Extraction From Remote Database*, Fall 2011
19. Arunkumar Chandrasekaran, *Implement a Dynamic Programming Algorithm for Matrix Chain Multiplication Using MapReduce*, Fall 2011
20. Dena Fitzgerald, *Baby Record iPhone Application*, Fall 2011
21. Christa McCarthy, *Neural Networks as a Blog Comment Spam Filter*, Fall 2011
22. Jaydeep Patel, *Hybrid Classifier: A Clustered Decision Tree*, Fall 2011
23. Bhavana Sudharshan, *A Demonstration of the "Categorization of Web Documents Using Extraction Ontologies" Approach for Mobile Phones Application Domain*, Fall 2011

## Funding

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### 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

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### University-Level

1. Academic Master Plan Committee: AY 2015-2016
2. General Education Committee: AY 2016-2017, 2015-2016
3. General Education Task Force: AY 2019-2020, 2018-2019, 2017-2018

4. Promoting Undergraduate Research Experiences Committee (PURE): AY 2010-2011
5. SafeSpace Ally, CSU Fullerton Multicultural Leadership Center: 2009-present
6. Supplemental Instruction (SI) Department Liaison: AY 2016-2017, 2015-2016, 2014-2015, 2013-2014

### **College of Engineering and Computer Science**

1. Ad-Hoc Committee: AY 2017-2018
2. Commencement Committee: AY 2012-2013, 2011-2012, 2010-2011, 2009-2010
3. Curriculum Committee: AY 2017-2018, 2016-2017, 2015-2016

### **Department of Computer Science**

1. ACM Student Chapter Advisor: AY 2014-2015, 2013-2014, 2012-2011, 2011-2012
2. Assessment Committee: AY 2018-2019, AY 2017-2018
3. Chair Election Committee Chair: AY 2011-2012
4. Graduate Program Committee: AY 2015-2016, 2014-2015
5. Executive Committee: AY 2012-2013, 2010-2011
6. Personnel Committee: AY 2016-2017, 2015-2016
7. Selection (Faculty Search) Committee: AY 2015-2016, 2014-2015, 2013-2014
8. Undergraduate Program Coordinator: AY 2017-2018, 2016-2017, 2015-2016, 2014-2015
9. Undergraduate Program Committee: AY 2018-2019, AY 2017-2018, 2016-2017, 2015-2016, 2014-2015, 2013-2014, 2012-2013, 2011-2012, 2010-2011, 2009-2010

### **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. Orange Country Register, *Titan Voice: Computer science student inspires next generation of tech women*, December 2018, <https://www.ocregister.com/2018/12/05/titan-voice-computer-science-student-inspires-next-generation-of-tech-women/>
2. Pearson Higher Education, *MyProgrammingLab: A Success Story*, <http://myprogramminglab.com/success-stories/profiles-of-mpl-users.html>.
3. 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**, SIGCSE 2020, 2013 ACM-ICPC North America Qualifier Contest, *Open Data Structures*

(textbook), IEEE Transactions on Education

**External Reviewer**, CCWC 2020, SIGCSE 2020, 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

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**Best Software**, CSUF ECS Student Projects Showcase and Awards, for poster P- 1, sponsored by Raytheon, 2019

**Faculty Advisor of Distinction**, CSU Fullerton, March 2018

**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

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Association of Computing Machinery (ACM)

## Technical Skills

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### Programming Languages

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