

## 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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**Professor**, Department of Computer Science, CSU Fullerton, 2022 – present

**Visiting Associate Professor**, MCS Program, Department of Computer Science, UC Irvine, Spring 2020 and Spring 2019

**Associate Professor**, Department of Computer Science, CSU Fullerton, 2015 – 2022

**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-7.
- 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-10.

### 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. K. A. Wortman and Nicholas Smith, *CombinoChord: A Guitar Chord Generator App*, IEEE 11th Annual Computing and Communication Workshop and Conference (CCWC 2021), Las Vegas, Nevada, 2021.
- C-2. Shekhar Palit and K. A. Wortman, *Perfect Tabular Hashing in Pseudolinear Time*, IEEE 11th Annual Computing and Communication Workshop and Conference (CCWC 2021), Las Vegas, Nevada, 2021.
- C-3. Coleman Nugent and K. A. Wortman, *Crumple Trees*, IEEE 10th Annual Computing and Communication Workshop and Conference (CCWC 2020), Las Vegas, Nevada, 2020.
- C-4. J.R. Richardson and K. A. Wortman, *Street Scanner Geo-Location*, 21st Intelligent Transport Systems World Congress (IST 2014), Detroit, Michigan, 2014.
- C-5. 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-6. 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-7. 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-8. 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-9. 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-10. 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**

Term	120	131	223C	254	305	335	439	452	481	484	535	597
Fall 2021		✓									✓	
Spring 2021						✓	✓					
Fall 2020		✓									✓	
Spring 2020	✓									✓		
Fall 2019	✓										✓	
Summer 2019						✓						
Spring 2019						✓				✓	✓	
Fall 2018	✓				✓	✓						
Summer 2018						✓						
Spring 2018						✓				✓		
Fall 2017					✓	✓						
Summer 2017								✓				
Fall 2016		✓					✓					
Spring 2016		✓								✓		
Fall 2015		✓					✓					
Summer 2015						✓						
Spring 2015			✓			✓						
Fall 2014						✓	✓					
Summer 2014						✓						
Spring 2014						✓						
Fall 2013		✓							✓			
Summer 2013						✓						
Spring 2013		✓				✓						
Fall 2012	✓											
Summer 2012						✓		✓				
Spring 2012	✓					✓	✓					
Fall 2011	✓											✓
Summer 2011						✓						
Spring 2011	✓			✓		✓						
Fall 2010	✓											
Summer 2010						✓						
Spring 2010	✓			✓		✓						
Fall 2009	✓					✓						

### Courses Taught — UC Irvine

- COMPSI 261P Data Structures: Spring 2020, Spring 2019

### Courses Developed

1. CPSC 535 Advanced Algorithms, first offered Spring 2019
2. CPSC 305 Coding For Artists, first offered Fall 2017
3. CPSC 223C C Programming, first offered Spring 2015
4. CPSC 439 Theory of Computation, first offered Fall 2014

5. CPSC 223P Python Programming, co-proposer, first offered Fall 2012

### Teaching Assistant Experience — UC Irvine

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

## 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 Liason: 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 2021-2022 (chair), 2020-2021, 2018-2019, 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 2021-2022, 2018-2019, 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 County Register, [Animation opens pathway for CSUF computer science grad to blend science, art](#), April 16, 2020

2. Orange County Register, [CSUF computer science grad says her goal is to make technology secure](#), April 16, 2020
3. Orange County Register, [Titan Voice: Computer science student inspires next generation of tech women](#), December 5, 2018
4. The Pollak Library Blog, [Dr. Wortman's top resources for trends in Computer Science](#), invited guest post, December 2, 2010

**Reviewer**, CCWC 2021, CCWC 2020, SIGCSE 2020, 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

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