

CURRICULUM VITAE

Cesim Erten

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RESEARCH INTERESTS

Bioinformatics Algorithms, Systems Biology, Computational Analysis of Biological Networks
Design, Analysis, and Engineering of Graph Algorithms

EDUCATION

UNIVERSITY OF ARIZONA	Computer Science	Ph.D.	2004
UNIVERSITY OF ARIZONA	Computer Science	M.S.	2000
BILKENT UNIVERSITY	Computer Engineering	B.S.	1998

PROFESSIONAL EXPERIENCE

2017-Present	<u>Prof.</u> , Computer Engineering, ANTALYA INTERNATIONAL UNIVERSITY
2015-2016	<u>Visiting Researcher</u> , Computational Genomics Group, CENTRO DE INVESTIGACIONES PRINCIPE FELIPE, VALENCIA
2011-2017	<u>Assoc. Prof.</u> , Computer Engineering, KADIR HAS UNIVERSITY
2008-2011	<u>Asst. Prof.</u> , Computer Engineering, KADIR HAS UNIVERSITY
2005-2008	<u>Asst. Prof.</u> , Computer Science and Engineering, ISIK UNIVERSITY
2004-2005	<u>Postdoctoral Research Associate</u> , <u>Adjunct Lecturer</u> , Computer Science, UNIVERSITY OF ARIZONA
2001-2004	<u>Research Assistant</u> , Computer Science, UNIVERSITY OF ARIZONA
1999-2004	<u>Summer Lecturer</u> , Computer Science, UNIVERSITY OF ARIZONA

JOURNAL ARTICLES (Authors are listed in alphabetical order in all publications)

1. F. Alkan, C. Erten, "RedNemo: Topology-based PPI Network Reconstruction via Repeated Diffusion with Neighborhood Modifications", *Bioinformatics*, vol. 33 (4), pp 537-544, 2017.
2. F. Alkan, C. Erten, "SiPAN: Simultaneous Prediction and Alignment of Protein-Protein Interaction Networks", *Bioinformatics*, vol 31 (14), pp. 2356-2363, 2015.
3. F. Alkan, C. Erten, "BEAMS: backbone extraction and merge strategy for the global many-to-many alignment of multiple PPI networks", *Bioinformatics*, vol 30 (4), pp. 531-539, 2014.
4. G. Abaka, T. Biyikoglu, C. Erten, "CAMPways: Constrained Alignment Framework for the Comparative Analysis of a Pair of Metabolic Pathways", *Bioinformatics*, vol 29 (13), pp. i145-i153, 2013.
5. A. E. Aladag, C. Erten, "SPINAL: Scalable Protein Interaction Network Alignment", *Bioinformatics*, vol 29 (7), pp. 917-924, 2013.
6. U. Brandes, C. Erten, A. Estrella-Balderrama, J. Fowler, F. Frati, M. Geyer, C. Gutwenger, S. Hong, M. Kaufmann, S. G. Kobourov, G. Liotta, P. Mutzel, and A. Symvonis, "Colored Simultaneous Geometric Embeddings and Universal Pointsets", *Algorithmica*, vol 60 (3), pp. 569-592, 2011.

7. A. E. Aladag, C. Erten, M. Sozdinler, "Reliability Oriented Bioinformatic Networks Visualization", *Bioinformatics*, vol 27 (11), pp.1583-1584, 2011.
8. C. Erten, M. Sozdinler, "Improving Performances of Suboptimal Greedy Iterative Biclustering Heuristics via Localization", *Bioinformatics*, vol 26 (20), pp. 2594-2600, 2010.
9. A. Efrat, C. Erten, D. Forrester, A. Iyer, O. Kilic, S. Kobourov, "Force-Directed Approaches to Sensor Localization", *ACM Transactions on Sensor Networks*, vol 7 (3), Article 27, pp.1-27, 2010.
10. A.O. Cakiroglu, C. Erten, "Fully Decentralized and Collaborative Multilateration Primitives for Uniquely Localizing WSNs", *EURASIP Journal on Wireless Communications and Networking*, vol.2010, Article ID 605658, pp. 1-7, 2010 (invited).
11. A.O. Cakiroglu, C. Erten, O. Karatas, M. Sozdinler, "Crossing Minimization in Weighted Bipartite Graphs", *Journal of Discrete Algorithms (JDA)*, vol.7, no.4, pp.439-452, 2009.
12. A. Efrat, C. Erten, S. G. Kobourov, "Fixed-Location Circular-Arc Drawing of Planar Graphs", *Journal of Graph Algorithms and Applications (JGAA)*, vol.11, no.1, pp.145-164, 2007.
13. P. Brass, E. Cenek, C. Duncan, A. Efrat, C. Erten, D. Ismailescu, S. Kobourov, A. Lubiw, J. Mitchell, "On Simultaneous Planar Graph Embeddings", *Computational Geometry: Theory and Applications (CGTA)*, vol.36, pp.117-130, 2007.
14. C. Erten, S. G. Kobourov, "Simultaneous Embedding of a Planar Graph and Its Dual on the Grid," *Theory of Computing Systems (TOCS)*, vol. 38, pp.313-327, 2005 (invited).
15. C. Erten, S. G. Kobourov, "Simultaneous Embedding of Planar Graphs with Few Bends", *Journal of Graph Algorithms and Applications (JGAA)*, vol.9, no.3, pp.347-364, 2005 (invited).
16. C. Erten, S. G. Kobourov, V. Le, and A. Navabi, "Simultaneous Graph Drawing: Layout Algorithms and Visualization Schemes", *Journal of Graph Algorithms and Applications (JGAA)*, vol. 9, no. 1, pp.165-182, 2005 (invited).

REFEREED CONFERENCE PUBLICATIONS

1. F. Alkan, T. Biyikoglu, M. Demange, C. Erten, "Alignment of a Pair of Graphs", *Proc. Foundations of Computational Mathematics (FOCM)*, 2014.
2. G. Abaka, T. Biyikoglu, C. Erten, "CAMPways: Constrained Alignment Framework for the Comparative Analysis of a Pair of Metabolic Pathways", *Proc. of 21st International Conference on Intelligent Systems for Molecular Biology (ISMB), 12th European Conference on Computational Biology (ECCB)*, pp. i145-i153, 2013.
3. A. Aladag, C. Erten, M. Sozdinler, "An Integrated Model for Visualizing Biclusters from Gene Expression Data and PPI Networks", *Proc. Int. Symp. on Biocomputing (ISB 2010)*, no 24, 2010.
4. C. Erten, O. Karatas, "A Robust Localization Framework to Handle Noisy Measurements in WSNs", *Proc. of 24th Int. Symp. on Computer and Information Sciences (ISCIS 09)*, pp. 709-714, 2009.
5. A. Cakiroglu, C. Erten, "Fully Decentralized and Collaborative Multilateration Primitives for Uniquely Localizing WSNs", *Proc. Int. Conf. on Wireless Algorithms, Systems and Applications (WASA)*, Lecture Notes in Computer Science 5682, pp. 348-357, 2009.
6. C. Erten, M. Sozdinler, "Biclustering Expression Data Based on Expanding Localized Substructures", *Proc. Int. Conf. on Bioinformatics and Computational Biology (BICOB 09)*, LNBI 5462, pp. 224-235, 2009.
7. C. Erten, M. Sozdinler, "A Robust Biclustering Method Based on Crossing Minimization in Bipartite Graphs", *Proc. Int. Symp. Graph Drawing (GD'08)*, Lecture Notes in Computer Science 5417, pp. 439-440, 2009.

8. U. Brandes, C. Erten, J. Fowler, F. Frati, M. Geyer, C. Gutwenger, S. Hong, M. Kaufmann, S. Kobourov, G. Liotta, P. Mutzel, A. Symvonis, “Colored Simultaneous Geometric Embeddings”, *Proc. 13th Annual International Computing and Combinatorics Conference (COCOON 2007)*, Lecture Notes in Computer Science 4598, pp.254-263, 2007.
9. A.O. Cakiroglu, C. Erten, O. Karatas, M. Sozdinler, “Crossing Minimization in Weighted Bipartite Graphs”, *Proc. 6th Workshop on Experimental Algorithms (WEA 2007)*, Lecture Notes in Computer Science 4525, pp. 122-135, 2007.
10. A. Efrat, C. Erten, D. Forrester, A. Iyer, S. Kobourov, “Force-directed Approaches to Sensor Localization”, *Proc. 8th ACM/SIAM Workshop on Algorithm Engineering and Experiments (ALENEX)*, pp.108-118, 2006.
11. Esther Arkin, Alon Efrat, Cesim Erten, Ferran Hurtado, Joseph Mitchell, Valentin Polishchuk and Carola Wenk, “Shortest Tour of a Sequence of Disjoint Segments in L_1 ”, *Proc. of 16th Fall Workshop on Computational and Combinatorial Geometry*, 2006.
12. P. Borunda, C. Brewer, C. Erten, N. King, Z. Nation, M. Shokhriev, “GSPIM: Graphical Visualization Tool for MIPS Assembly Programming and Simulation”, *ACM SIGCSE Bulletin*, vol. 38, no.1, pp.244-248, 2006.
13. C. Erten, S. G. Kobourov, “Simultaneous Embedding of Planar Graphs with Few Bends”, *Proc. 12th Int. Symp. Graph Drawing (GD)*, Lecture Notes in Computer Science 3383, pp. 195-205, 2004.
14. C. Erten, S. G. Kobourov, C. Pitta, “Morphing Planar Graphs”, *Proc. 20th ACM Symposium on Computational Geometry (SoCG)*, pp.451-452, 2004.
15. C. Erten, P. Harding, S. G. Kobourov, K. Wampler, G. Yee, “Exploring the Computing Literature Using Temporal Graph Visualization”, *IS&T/SPIE 16th Annual Symposium on Electronic Imaging Conference, Visualization and Data Analysis (VDA)*:5295-05, 2004.
16. C. Erten, S. G. Kobourov, V. Le, A. Navabi, “Simultaneous Graph Drawing: Layout Algorithms and Visualization Schemes”, *Proc. 11th Int. Symp. Graph Drawing (GD)*, Lecture Notes in Computer Science 2912, pp. 437-449, 2003.
17. A. Efrat, C. Erten, S. G. Kobourov, “Fixed-Location Circular-Arc Drawing of Planar Graphs”, *Proc. 11th Int. Symp. Graph Drawing (GD)*, Lecture Notes in Computer Science 2912, pp. 147-158, 2003.
18. C. Erten, S. G. Kobourov, C. Pitta, “Intersection-Free Morphing of Planar Graphs”, *Proc. 11th Int. Symp. Graph Drawing (GD)*, Lecture Notes in Computer Science 2912, pp. 320-332, 2003.
19. C. Erten, P. J. Harding, S. G. Kobourov, K. Wampler, and G. Yee, “GraphAEL: Graph Animations with Evolving Layouts”, *Proc. 11th Int. Symp. Graph Drawing (GD)*, Lecture Notes in Computer Science 2912, pp. 98-110, 2003.
20. P. Brass, E. Cenek, C. A. Duncan, A. Efrat, C. Erten, D. Ismailescu, S. G. Kobourov, A. Lubiw, J. S. B. Mitchell, “On Simultaneous Planar Graph Embeddings”, *Proc. 8th Workshop on Algorithms and Data Structures (WADS)*, Lecture Notes in Computer Science 2748, pp. 243-255, 2003.
21. C. Erten and S. G. Kobourov, “Simultaneous Embedding of a Planar Graph and Its Dual on the Grid”, *Proc. 13th Intl. Symp. on Algorithms & Computation (ISAAC)*, Lecture Notes in Computer Science 2518, pp.575-587, 2002.

OTHER PUBLICATIONS

1. C. Erten, "Simultaneous Embedding and Visualization of Graphs", *PhD Thesis*, University of Arizona, 2004.
2. C. Erten, S. G. Kobourov, "Simultaneous Embeddings", *12th Workshop on Computational Geometry*, DIMACS, 2002.

OPEN-SOURCE RESEARCH SOFTWARE

1. **SiPAN** Simultaneous Prediction and Alignment of Networks (F. Alkan, C. Erten)
2. **BEAMS** Global many-to-many alignment of multiple PPI networks (F. Alkan, C. Erten)
3. **CampWays** Constrained Alignment of Metabolic Pathways (G. Abaka, C. Erten)
4. **SPINAL** Scalable PPI Network Alignment (A. E. Aladag, C. Erten)
5. **RobinViz** Reliability Oriented Bioinformatics Networks Visualization. (A. E. Aladag, C. Erten, M. Sozdinler)
6. **uniLoc** Fully decentralized and collaborative multilateration primitives for uniquely localizing wireless sensor networks. (A. Cakiroglu, C. Erten)
7. **LEB** Biclustering gene expression data, based on Localize-and-Extract Biclusters (LEB), (C. Erten, M. Sozdinler)
8. **WOLF** Crossing minimization in weighted one layer free drawings (WOLF) of bipartite graphs, (A.O. Cakiroglu, C. Erten, O. Karatas, M. Sozdinler)
9. **SensorLoc** Force-directed approaches to sensor network localization, (A. Efrat, C. Erten, D. Forrester, A. Iyer, O. Kilic, S. Kobourov. With the aid of A. Ardal in experimentation.)
10. **GraphAEL** Data extraction and visualization tool for 2D/3D animations of evolving graphs from scientific literature, (C. Erten, P. J. Harding, S. G. Kobourov, K. Wampler, G. Yee)
11. **TGRIP** Interactive visualization tool for large, weighted graphs with a temporal component, (C. Erten, P. J. Harding, S. G. Kobourov, K. Wampler, G. Yee)
12. **GMORPH** Interactive tool for planar graph editing and animation via intersection-free morphing, (C. Erten, S. G. Kobourov, C. Pitta)
13. **GSPIM** Interactive tool for visualization/programming/simulation of low-level MIPS Assembly code, (P. Borunda, R. Bressel, C. Brewer, A. Danielescu, C. Erten, N. King, Z. Nation, M. Shokriev)

FUNDED RESEARCH PROJECTS

1. Computational Approaches for Module Detection in Protein-Protein Interaction Networks, PI, TUBITAK-BIDEB, 2015-2016, €18000
2. A Heterogenous Programming Library for Distributed Multicore CPU and Multiple GPU Systems, TUBITAK, 2013-2015, ≈ \$70000
3. Bionetalign: Global Alignment of Biochemical Networks for Functional Orthology Detection, PI, TUBITAK, 2012-2014, ≈ \$95000
4. ROBINViz: Reliability Oriented Bioinformatics Networks Visualization, PI, TUBITAK, 2009-2011, ≈ \$70000
5. Localization of Mobility Aware Sensor Networks, PI, TUBITAK, 2006-2009, ≈ \$90000

SUPERVISED THESES

1. M. Sozdinler, Visualization and analysis of Biological Networks, BOGAZICI UNIVERSITY, Coadvisor, PhD Thesis, 2012 - ongoing .
2. F. Alkan, Global Many-to-Many Alignment of Multiple PPI Networks, KADIR HAS UNIVERSITY, MSc Thesis, 2014.
3. G. Abaka, Alignment of Metabolic Pathways, KADIR HAS UNIVERSITY, MSc Thesis, 2014.
4. Y. Yenigun, Constrained Alignments of PPI Networks, KADIR HAS UNIVERSITY, MSc Thesis, 2013.
5. E. Aladag, Visualization of Protein-Protein Interaction Networks, KADIR HAS UNIVERSITY, MSc Thesis, 2011.
6. A. Cakiroglu, Distributed Iterative Cluster Localization in Sensor Networks, ISIK UNIVERSITY, MSc Thesis, 2008.
7. O. Karatas, A Robust Localization Framework for Wireless Sensor Networks, ISIK UNIVERSITY, MSc Thesis, 2008.
8. M. Sozdinler, Crossing Minimization Applications on Biclustering, ISIK UNIVERSITY, MSc Thesis, 2008.

SCHOLARSHIPS AND AWARDS

2015–2016	Postdoctoral Research Fellowship, TUBITAK, BIDEB
2000–2001	Fellowship for graduate studies, UNIVERSITY OF ARIZONA
1998–2000	Research grant under the “A1 Science Fellowships Program” for graduate studies, SCIENTIFIC AND TECHNICAL RESEARCH COUNCIL OF TURKEY
1994–1998	Merit scholarship for undergraduate studies, including tuition and monthly stipend, BILKENT UNIVERSITY

SERVICE TO THE COMMUNITY

Member of the ACM, ISCB. TPC member for CNB-MAC 2016/17, HIBIT 2017.

Reviewer for conferences/journals including,

Bioinformatics, PLOS One, BMC Systems Biology
Journal of Graph Algorithms and Applications (JGAA),
Computational Geometry Theory and Applications (CGTA),
Discrete Applied Mathematics (DAM),
Distributed and Parallel Databases (DAPD),
Symposium on Computational Geometry (SoCG),
Graph Drawing (GD),
Symposium on Discrete Algorithms (SODA),
International Symposium on Computer Networks (ISCN),
Structural Information and Communication Complexity (SIROCCO),
Journal on Wireless Communications and Networking (JWCN).

Referee/reviewer for several industrial, academic research projects funded by TUBITAK.

REFERENCES

Available upon request.