

SERDAR BOZDAG

EDUCATION

- Ph.D. in Computer Science**, University of California, Riverside *Sep 2003 – Aug 2008*
Dissertation Title: “*Combinatorial Approaches to the Physical Mapping Problem*”
Advisor: Stefano Lonardi, Ph.D.
- BS in Computer Engineering**, Marmara University, Istanbul, Turkey *Sep 1998 – June 2002*

RESEARCH EXPERIENCE

- Postdoctoral Fellow**, Neuro-Oncology Branch, National Cancer Institute, National Institutes of Health, Bethesda, MD *Oct 2008 – Present*
Supervisor: Howard A. Fine, MD

- Analyzed high-throughput genomic, genetic, and epigenetic datasets to discover age-specific signatures in glioblastoma.
- Developed a tool for reverse engineering gene regulatory networks via parallel programming.
- Involved in developing a web-based tool for assigning glioma patients to specific molecular subtypes.
- Involved in developing a web-based tool for reporting copy number alterations in glioma patients.

- Graduate Research Assistant**, Department of Computer Science and Engineering, University of California, Riverside *Sep 2005 – Aug 2008*
- Designed and implemented algorithms to construct optimized physical maps from fingerprinted clones.
 - Designed and implemented software to compute the minimal tiling path of physical maps.

TEACHING EXPERIENCE

- Adjunct Assistant Professor**, Biotechnology Studies Program, Graduate School of Management and Technology, University of Maryland University College, Largo, MD *Jan 2011 – Jan 2012*

- Courses taught to graduate students
Gene Expression Data Analysis (Spring 2011, Fall 2011)

- Teaching Assistant**, Department of Computer Science and Engineering, University of California, Riverside *Sep 2003 – June 2005*

- Courses taught to undergraduates
Intermediate Data Structures and Algorithms (3 quarters)
Principles of Programming Languages (1 quarter)
Textual Databases Design Project (1 quarter)
- Received the *Outstanding Teaching Assistant Award* in 2004

INDUSTRIAL EXPERIENCE

- Software Engineer**, Mobipath, Istanbul, Turkey *Feb 2002 – June 2003*

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- Designed and implemented software based on wireless communication technologies.

Software Engineering Intern, Arcelik AS, Istanbul, Turkey

June 2000 – Aug 2000

PEER-REVIEWED PUBLICATIONS

- S. N. Sahu, J. Lewis, I. Patel, **S. Bozdag**, J. H. Lee, R. Sprando, H. N. Cinar, “*Genomic analysis of stress response against arsenic in *Caenorhabditis elegans**”, in preparation.
- **S. Bozdag**, A. Li, G. Riddick, Y. Kotliarov, M. Baysan, F. M. Iwamoto, M. C. Cam, S. Kotliarova, H. A. Fine, “*Age-specific signatures of glioblastoma at the genomic, genetic, and epigenetic levels*”, submitted to *PLoS ONE*.
- M. Baysan, **S. Bozdag**, M. C. Cam, S. Kotliarova, S. Ahn, J. Walling, J. K. Killian, H. Stevenson, H. A. Fine, “*G-CIMP status prediction of glioblastoma samples using mRNA expression data*”, submitted to *Cancer Research*.
- **S. Bozdag**, T. J. Close, S. Lonardi, “*Selecting the minimal tiling path from a physical map via integer linear programming*”, submitted to *IEEE/ACM Transactions on Computational Biology and Bioinformatics*.
- S. Wuchty, A. Vazquez, **S. Bozdag**, P. O. Bauer, “*Genome-wide Associations of Signaling Pathways in Glioma Subtypes*”, submitted to *PloS Computational Biology*.
- S. Wuchty, D. Arjona, **S. Bozdag**, P. O. Bauer, “*The role of cancer-related miRs in networks of miR-gene interactions*”, *NAR*, accepted.
- S. N. Sahu, J. Lewis, I. Patel, **S. Bozdag**, J. H. Lee, J. E. LeClerc, H. N. Cinar, “*Genomic Analysis of Immune Response against *Vibrio cholerae* Hemolysin in *Caenorhabditis elegans**”, *PLoS ONE* 2012 7(5): e38200.
- A. Li, **S. Bozdag**, S. Wuchty, J. C. Zenklusen, H. A. Fine, “*GliomaPredict: A clinically useful tool for assigning glioma patients to specific molecular subtypes*”, *BMC Medical Informatics and Decision Making* 2010, 10:38.
- **S. Bozdag**, A. Li, S. Wuchty, H. A. Fine, “*FastMEDUSA: A parallelized tool to infer gene regulatory networks*”, *Bioinformatics*, 2010, 26 (14) 1792-1793.
- Y. Kotliarov, **S. Bozdag**, H. Chen, S. Wuchty, J. C. Zenklusen, H. A. Fine, “*CNAReporter: A computational tool for the generation of clinical reports of genomic alterations*”, *BMC Medical Genomics* 2010, 3:11.
- T. J. Close, P. R. Bhat, S. Lonardi, Y. Wu, N. Rostoks, L. Ramsay, A. Druka, N. Stein, J. T. Svensson, S. Wanamaker, **S. Bozdag**, M. L. Roose, M. J. Moscou, S. Chao, R. Varshney, P. Szucs, K. Sato, P. M. Hayes, D. E. Matthews, A. Kleinhofs, G. J. Muehlbauer, J. DeYoung, D. F. Marshall, K. Madishetty, R. D. Fenton, P. Condamine, A. Graner and R. Waugh, “*Development and implementation of high-throughput SNP genotyping in barley*”, *BMC Genomics*, 2009, 10:582.
- **S. Bozdag**, T. J. Close, S. Lonardi, “*A compartmentalized approach to the assembly of physical maps*”, *BMC Bioinformatics* 2009, 10:217.
- **S. Bozdag**, T. J. Close, S. Lonardi, “*Computing the minimal tiling path from a physical map by integer linear programming*”, Proceedings of *Workshop on Algorithms in Bioinformatics (WABI'08)*, pp 148-161.
- **S. Bozdag**, T. J. Close, S. Lonardi, “*A compartmentalized approach to the assembly of physical maps*”, Proceedings of *IEEE International Symposium on Bioinformatics & Bioengineering (BIBE'07)*, pp. 218-225, Boston, MA, 2007.

ABSTRACTS / POSTERS

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- S. Sahu, J. Lewis, I. Patel, S. Bozdag, J. LeClerc, H. Cinar, “*Genomic Analysis of Immune Response Against Vibrio cholerae Hemolysin in Caenorhabditis elegans*”, Abstract in 18th International C. elegans Meeting, 2011.
- T. J. Close, M. Luo, S. Lonardi, M. Alpert, D. Duma, **S. Bozdag**, A. Farmer, G. D. May, S. A. Jackson, Y. Ma, Y. Q. Gu, J. Wu, F. M. You, N. Diop, S. Wanamaker, R. D. Fenton, M. P. Timko, P. A. Roberts, J. D. Ehlers, “*Genome Resources for Cowpea Genotype IT97K-499-35*”, Poster in *Plant and Animal Genomics XIX Conference*, 2011.
- **S. Bozdag**, A. Li, S. Wuchty, H. A. Fine, “*Inferring gene regulatory networks via parallel programming*”, Poster in 3rd joint conference on Systems Biology, Regulatory Genomics, and DREAM – Reverse Engineering Challenges, 2010.
- A. Li, **S. Bozdag**, S. Wuchty, J. C. Zenklusen, H. A. Fine, “*GliomaPredict: A clinically useful tool for assigning glioma patients to specific molecular subtypes*”, Poster in 3rd joint conference on Systems Biology, Regulatory Genomics, and DREAM – Reverse Engineering Challenges, 2010.
- **S. Bozdag**, T. J. Close, S. Lonardi, “*A graph-theoretic approach to compute minimal tiling path from a physical map*”, *Proceedings of LSS Computational Systems Bioinformatics Conference (CSB’08)*.
- T. J. Close, S. Lonardi, M.C. Luo, J. Dolezel, P. Bhat, K. Madishetty, J. T. Svensson, J. Zheng, Y. Wu, **S. Bozdag**, J. Resnik, S. Wanamaker, R.D. Fenton, M. Moscou, P. Condamine, E. L Rodriguez, M. L. Roose, Y. Ma, F. You, J. Bartos, H. Simkova, N. Rostoks, L. Ramsay, D.F. Marshall, R. Waugh, N. Stein, A. Graner, R. Varshney, K. Sato, R. Wing, A. Schulman, ..., B. Steffenson, “*Coupling ESTs, SNPs, BACs, Mapping Populations, Flow-Sorting And Synteny To Access The Barley Genome*”, Poster in *Plant and Animal Genomes XVII Conference, 2009*.
- **S. Bozdag**, T. J. Close, S. Lonardi, “*A Compartmentalized Approach to the Assembly of the Physical Maps*”, Poster in *Plant and Animal Genomes XVI Conference, 2008*.
- Y. Ma, H. Witt, R. Naderi, F. M. You, C. X. Wang, K. Madishetty, J. T. Svensson, J. Zheng, P. Condamine, R. Ashgar, S. Wanamaker, P. Bhat, M. Moscou, E. Rodriguez, H. Walia, J. Resnik, **S. Bozdag**, G. J. Muehlbauer, S. Lonardi, T. J. Close, M.C. Luo, “*Updates on Contig Assembly with Gene-Containing BACs of Barley*”, Poster in *Plant and Animal Genomes XVI Conference, 2008*.
- K. Madishetty, P. Condamine, M. Moscou, J. T. Svensson, J. Zheng, S. Wanamaker, P. Bhat, E. Rodriguez, H. Walia, **S. Bozdag**, J. Resnik, H. Le, S. Heinen, G. H. Muehlbauer, M.C. Luo, T. Jiang, S. Lonardi, H. Witt, F. You, T. J. Close, “*Progress on physical mapping of the gene-space of barley*”, Abstract in *Plant and Animal Genomes XV Conference, 2007*.
- Y. Ma, H. Witt, R. Naderi, F. M. You, C. X. Wang, K. Madishetty, J. T. Svensson, J. Zheng, P. Condamine, R. Ashgar, S. Wanamaker, P. Bhat, M. Moscou, E. Rodriguez, H. Walia, J. Resnik, **S. Bozdag**, G. J. Muehlbauer, S. Lonardi, T. J. Close, M.C. Luo, “*Contig assembly of gene-containing BACs of barley*”, Poster in *Plant and Animal Genomes XV Conference, 2007*.
- J. T. Svensson, K. Madishetty, J. Zheng, Jin Xu, P. Condamine, R. Ashgar, S. Wanamaker, P. Bhat, M. Moscou, E. Rodriguez, H. Walia, J. Resnik, H. Le, **S. Bozdag**, H. Witt, F. You, N. Rostoks, R. Waugh, N. Stein, R. Varshney, A. Graner, M.C. Luo, X. Cui, T. Jiang, S. Lonardi, T. J. Close, “*Connecting the barley genetic and physical maps for 1000 abiotic stress genes*”, Abstract in *Plant and Animal Genomes XIV Conference, 2006*.

INVITED TALKS

- “*FastMEDUSA: A parallelized tool to reverse engineer gene regulatory networks*”, March 2012
Department of Mathematics, Statistics and Computer Science, Marquette University,
Milwaukee, WI

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- “FastMEDUSA: A parallelized tool to reverse engineer gene regulatory networks”, Department of Computer Science, Northeastern Illinois University, Chicago, IL Jan 2012
- “FastMEDUSA: A parallelized tool to reverse engineer gene regulatory networks”, Department of Embrology, Carnegie Institution for Science, Baltimore, MD Dec 2011
- “FastMEDUSA: A parallelized tool to reverse engineer gene regulatory networks”, Children’s Medical Center Research Institute, University of Texas Southwestern, Dallas, TX Nov 2011
- “Reverse engineering of gene regulatory networks via parallel programming”, National Center for Biotechnology Information, National Institutes of Health, Bethesda, MD Sep 2011
- “Reverse engineering of gene regulatory networks via parallel programming”, Department of Computer Engineering, Koc University, Istanbul, Turkey May 2011
- “Reverse engineering of gene regulatory networks via parallel programming”, Department of Electrical and Electronics Engineering, Sehir University, Istanbul, Turkey May 2011
- “Reverse engineering of gene regulatory networks via parallel programming”, Genetic Engineering and Biotechnology Institute, TUBITAK Marmara Research Center, Gebze, Turkey May 2011
- “Reverse engineering of gene regulatory networks via parallel programming”, Department of Biological Sciences and Bioengineering, Sabanci University, Istanbul, Turkey May 2011
- “Reverse engineering of gene regulatory networks via parallel programming”, Department of Molecular Biology and Genetics, Bosphorus University, Istanbul, Turkey May 2011
- “Gene expression data analysis”, 9th National Medical Genetics Congress, Istanbul, Turkey. Dec 2010
- “Reverse engineering of gene regulatory networks via parallel programming”, 9th National Medical Genetics Congress, Istanbul, Turkey. Dec 2010
- “Discovery of glioma-subtype specific regulatory networks in glioblastoma”, Memorial Sloan-Kettering Cancer Center, New York, NY March 2009
- “Combinatorial approaches to the physical mapping problem”, Center for Plant Cell Biology (CEPCEB) Seminar Series, University of California, Riverside. June 2008
- “Combinatorial approaches to the physical mapping problem”, Department of Computer Science and Engineering, University of Minnesota, Minneapolis, MN. May 2008
- “Combinatorial approaches to the physical mapping problem”, Genome Center, University of California, Davis, CA, USA. April 2008
- “Combinatorial approaches to the physical mapping problem”, Agricultural Research Service, United States Department of Agriculture (USDA), Beltsville, MD. April 2008
- “Combinatorial approaches to the physical mapping problem”, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD. April 2008

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- “*Assembly of physical maps from fingerprinted clones*”, Department of Computer Engineering, Marmara University, Istanbul, Turkey. *March 2006*

AWARDS & HONORS

- **Certificate**, Scientists Teaching Science (9-week course), National Institutes of Health, Bethesda, MD. *June 2011*
- **Visiting Fellowship**, National Institutes of Health, Bethesda, MD. *Oct 2008 - Present*
- **Graduate Student Association Mini Grant**, University of California, Riverside. *2007*
- **Outstanding Teaching Assistant Award**, University of California, Riverside. *2004*
- **Dean’s Fellowship**, Department of Computer Science and Engineering, University of California, Riverside. *Sep 2003 – June 2005*
- **Graduate Research Scholarship**, Türkpetrol Foundation, Istanbul, Turkey. *2003*
- **Undergraduate Education Fellowship**, Finance Bank Foundation, Istanbul, Turkey. *Sep 1998 – June 2002*

COMMUNITY SERVICE

- **Founder and vice president** of Turkish Student Association (TSA) Student Club, University of California, Riverside. *Jan 2006 – Aug 2008*

PROFESSIONAL SERVICE

- **Member**, Reviewer Editorial Board of Frontiers in Bioinformatics and Computational Biology.
- **Reviewer**, Bioinformatics, Cell, Nature, Nucleic Acids Research (NAR), PLoS ONE.
- **Reviewer**, 4th Annual Chesapeake Science and Engineering Fair, Dec 2008.
- **Reviewer**, ICDM’08: IEEE International Conference on Data Mining, Pisa, Italy.
- **Reviewer**, WABI’08: Workshop on Algorithms in Bioinformatics, Universität Karlsruhe, Germany.
- **Reviewer**, CSB’08: Computational Systems Bioinformatics Conference, Stanford, CA.
- **Reviewer**, SDM’08: SIAM Conference on Data Mining, Atlanta, GA.
- **Reviewer**, WABI’07: Workshop on Algorithms in Bioinformatics, Philadelphia, PA.
- **Reviewer**, SMD’07: SIAM Conference on Data Mining, Minneapolis, MN.
- **Reviewer**, SMD’06: SIAM Conference on Data Mining, Bethesda, MD.
- **Reviewer**, ICTAI’05: IEEE International Conference on Tools with Artificial Intelligence, Hong Kong.

REFERENCES

SERDAR BOZDAG

- Howard A. Fine, MD, Neuro-Oncology Branch, National Cancer Institute, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD.
Phone: (301) 402-6383, Email: hfine@mail.nih.gov
- Stefano Lonardi, Ph.D., Department of Computer Science and Engineering, University of California, Riverside.
Phone: (951) 827-2203, Email: stelo@cs.ucr.edu
- Timothy J. Close, Ph.D., Department of Botany and Plant Sciences, University of California, Riverside.
Phone: (951) 827-4437, Email: timothy.close@ucr.edu
- Tao Jiang, Ph.D., Department of Computer Science and Engineering, University of California, Riverside.
Phone: (951) 827-2991, Email: jiang@cs.ucr.edu
- Hediye N. Cinar, MD, Food and Drug Administration, Laurel, MD
Phone: (301) 210-5188, Email: hediye.cinar@fda.hhs.gov
- Barbara Houtz, M.Ed., Eberly College of Science, The Pennsylvania State University
Phone: (814) 865-4158, Email: barbara.houtz@gmail.com