

UGUR DOGRUSOZ

Professor, Computer Eng. Dept.
Head, i-Vis Research Lab

Bilkent University, Ankara 06800, Turkey
+90 (312) 290 1612, <http://www.cs.bilkent.edu.tr/~ugur>

PERSONAL INFORMATION

Born in Corum, Turkey on Aug 28, 1968

EDUCATION

- | | |
|---|------|
| PhD, Computer Science, Rensselaer Polytechnic Institute | 1995 |
| "Cyclic structure & coloring of graphs and their parallel implementations" supervised by Mukkai S. Krishnamoorthy | |
| MSc, Computer Science, Rensselaer Polytechnic Institute | 1991 |
| "Simulators for abstract formal machines as an educational tool" supervised by Sam M. Kim | |
| BSc, Computer Engineering, Middle East Technical University | 1989 |

EMPLOYMENT

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| Professor | July 2015 – present |
| Associate Professor | Jun 2007 – July 2015 |
| Assistant Professor | Aug 1998 – Jun 2007 |
| Computer Engineering Dept., Bilkent University , Ankara, Turkey
Have been teaching courses on Algorithms, Data Structures, Graph Theory, and Object-Oriented Software Engineering, and actively doing research on Information Visualization, Graph Algorithms and Bioinformatics | |
| Visiting Investigator | 2015 |
| Computational Biology, Memorial Sloan-Kettering Cancer Center , New York
Worked on pathway informatics projects within the Pathway Commons project | |
| Director | 2002 – 2010 |
| Bilkent Center for Bioinformatics , Bilkent University, Ankara, Turkey
Co-founded the Center to encourage and coordinate research on bioinformatics at Bilkent | |
| Senior Research Staff Member | Aug 2007 – Jul 2008 |
| Tom Sawyer Software , Oakland, CA | |
| Vice President of Engineering | Feb – Aug 1998 |
| Tom Sawyer Software , Berkeley, CA | |
| <ul style="list-style-type: none">- Coordinated various on-going software products within the company,- Supervised research on graph layout,- Communicated with sales, marketing, and human resources divisions to keep them synched with the engineering effort,- Actively involved in recruiting to maintain the company's growth. | |
| Product Manager | Aug 1996 – Feb 1998 |
| Tom Sawyer Software , Berkeley, CA | |
| <ul style="list-style-type: none">- Directed and supervised several researchers on graph drawing as part of a research grant on Graph Visualization Technology by National Institute of Standards and Technology - Advanced Technology Program,- Organized and oversaw the release of the Graph Layout Toolkit which is a suite of portable libraries designed to bring sophisticated graph visualization technology to application developers. | |
| Research Staff Member | Aug 1995 – Aug 1996 |
| Tom Sawyer Software , Berkeley, CA | |
| <ul style="list-style-type: none">- Worked as a researcher and algorithm developer for the Graph Layout Toolkit which is a suite of portable libraries designed to bring sophisticated graph visualization technology to application developers. | |

Instructor

Fall 1994 – Spring 1995

Rensselaer Polytechnic Institute, Troy, New York

- Taught Computing Languages; a course on fundamental programming language concepts through exposure to three languages (namely, C, C++, and Lisp) of various programming paradigms and improving programming skills to the junior level.

Research Assistant

Summer 1992 & 1994

Rensselaer Polytechnic Institute, Troy, New York

- Participated in an NSF supported project to improve (designed an algorithm for automatic layout of the DFA obtained during the creation of a parse table) the educational tool named LRparse created to help students learn LR parsing with the aid of a graphical interface in C++.
- Implemented a user interface in C using X Window System for software developed in the Mechanical Engineering Department of RPI to simulate flow behavior in injection mold cavity.

Teaching Assistant

Spring 1990 – 1994

Rensselaer Polytechnic Institute, Troy, New York

- Assisted in teaching a variety of courses including Computer Algorithms, Formal Languages and Automata, Computer Structures, Discrete Mathematics, and Numerical Computing.

Software Engineer

Summer 1991

Çağıl Makina A.Ş., Çorum, Turkey

- Implemented in AutoLISP drawings of widely used machine parts as menu items of AutoCAD v.11 used in the company for constructing technical drawings.

Software Engineer

Spring 1987 – 1989

Aselsan Electronics Inc., Ankara, Turkey

- Developed software in FORTRAN and COBOL dealing with accounting of the company (such as generating paychecks).
- Designed a relational database system for the library of the company to keep track of the books, journals, and other documents in the library.

SCHOLARLY & PROFESSIONAL DUTIES, ACTIVITIES, AWARDS

Awards & Achievements

- National Young Scientist Career Development Award (Ulusal Genç Araştırmacı Kariyer Geliştirme Programı), TÜBİTAK (The Scientific and Technical Research Council of Turkey), 2005 – 2011.
- First place (with VISIBIOweb), in the contest for best support for SGBN layout and rendering, 2010.
- Publication awards by TÜBİTAK, 1998 – present.
- Received the rank of Associate Professor from the Turkish Inter-University Council (ÜAK), March 2003.
- Graduate scholarship award by Türk Petrol Vakfı (Turkish Oil Foundation), 1989 – 1990.
- TÜBİTAK (The Scientific and Technical Research Council of Turkey) scholar during 1987 – 1989.
- Dean's List of Distinguished Students, throughout entire higher education;
- Third highest GPA as of graduation in Computer Eng. Dept., Middle East Technical University, Ankara, Turkey, 1989.

Duties

- Editor (2016 – 2019), SBGN (Systems Biology Graphical Notation).
- Co-founder (2002) and Director (2002 – 2010), BCBI (Bilkent Center for Bioinformatics).
- Have been involved in initiatives and communities such as BioPAX (www.biopax.org) and SBGN (sbgn.org) to help develop standards for biological pathway exchange languages and notations.
- Mentor, Academy Summer Session, National Resource for Network Biology, 1 project during Summer 2015.
- Mentor, Google Summer of Code, National Resource for Network Biology, several projects during summers, 2012 - present.
- Department Curriculum Committee (2000 – 2007)

- Department ABET Accreditation Committee (2003 – 2007)
- Faculty Executive Committee (2000 – 2003),
- Co-editor, Special Issue on Combinatorial Pattern Matching, Theoretical Computer Science, volume 368, issue 3, pp. 195-248, December 10, 2006.
- Conference Chair and Program Committee Member, CPM 2004, Fifteenth Annual Combinatorial Pattern Matching Symposium, Istanbul, Turkey, July 5-7, 2004.
- Scientific Committee Member, The International Congress of Bioinformatics and Biomimetics, 2011.
- Scientific Committee Member, Workshop on Recent Advances in Applications of Bioinformatics and Biomimetics, 2010.
- Program Committee Member, First International Conference on Bioinformatics, Valencia, Spain, January 20-23, 2010.
- Program Committee Member, National Conference on Software Architecture (UYMK), Ankara, Turkey, November 4-5, 2010.
- Academic Committee Member, National Programming Training and Contest Program (UPEM), September 13-19, 2010.
- Graph Drawing Contest Committee Member, 16th International Symposium on Graph Drawing, Crete, Greece, September 21-24, 2008.
- Program Committee Member, Biotechnology and Bioinformatics Symposium (BIOT), 2008 – 2016.
- Program Committee Member, International Symposium on Health Informatics and Bioinformatics (HIBIT), 2008 – 2012.
- Program Committee Member, International Symposium on Computer and Information Sciences (ISCIS), 2004, 2008, and 2009.
- Program Committee Member, IMPROQ 2003, Workshop on Impact of Software Process on Quality, Ankara, Turkey, June 6, 2003.
- Have been serving as a reviewer for journals – including Bioinformatics, NAR (Nucleic Acids Research), AMS (Applied Mathematics Letters), JGAA (Journal of Graph Algorithms and Applications), Algorithmica, IJFCS (International Journal of Foundations of Computer Science), IEEE Transactions on Visualization and Computer Graphics – symposiums and conferences, and organizations such as AMS (American Mathematical Society).
- Have been serving as a referee for TÜBİTAK (The Scientific and Technical Research Council of Turkey) TİDEB (Technology Monitoring and Evaluation Board) and TİGVA (Turkish Technology Advancement Foundation) projects and as a panel member for evaluation of academic project proposals.
- Product Manager of Graph Layout Toolkit 2.4 of Tom Sawyer Software, Berkeley, CA, 1997.
- Chief Architect of Graph Layout Toolkit version 4 of Tom Sawyer Software, Berkeley, CA, 1997-1998.

Membership

- ACM SIGACT (Special Interest Group on Algorithms and Computation Theory) since 2000.
- IEEE Computer Society since 2000.
- ISCB (International Society for Computational Biology) since 2003.

INVITED LECTURES & TALKS

- "Newt: view, design and analyze pathways in SBGN and more", **5th Disease Maps Meeting**, Luxembourg Centre for Systems Biomedicine (held online), November 2020.
- "Newt: view, design and analyze pathways in SBGN and more", **COMBINE 2020**, online meeting, October 2020.
- "Constructing and visualizing pathways with web-based SBGN editor Newt", **3rd Disease Maps Meeting**, Institut Curie, Paris, France, June 2018.
- "Interactive web based analysis and curation of biological pathways with advanced layout and complexity management support", **BioNetVisA: from biological network reconstruction to data visualization and analysis in molecular biology and medicine**, Basel, Switzerland, Sept 2017.
- "Collaborative curation and visual analysis of biological pathways with advanced layout and complexity management", **The Institute Curie**, Paris, France, June 2017.
- "Newt: An open source web-based SBGN (graph) editor", **2nd Disease Maps Meeting**, European Institute for Systems Biology and Medicine, Lyon, France, February 2017.
- "Role of Documentation in OO Software Engineering", **Senior Design Course Seminar Series**, Computer Eng. Dept.,

Bilkent Univ., Ankara, 2014 – present.

- "ChiBE 2: Integrating biological pathways and genomic profiles", **9th International Workshop on Systems Biology Graphical Notation**, Edinburgh University, Edinburgh, Scotland, May 2013.
- "Pathway Visualization Methods and Tools", **Workshop on Recent Advances in Applications of Bioinformatics and Biomics**, Cesme, Izmir, Turkey, July 2010.
- "Pathway Visualization Methods and Tools", Department of Computer Science and Engineering, **Sabanci University**, Istanbul, Turkey, May 2010.
- "VISIBIOweb: a web-based SBGN-compliant layout and visualization service for BioPAX pathway models", **5th International Workshop on Systems Biology Graphical Notation**, SRI International, Menlo Park, CA, USA, October 2009.
- "Pathway Visualization Methods and Tools", **PharmGKB**, Department of Genetics, Stanford University Medical Center, Palo Alto, CA, USA, January 2009.
- "Pathway Visualization Methods and Tools", **Gladstone Institute of Cardiovascular Disease**, UCSF, San Francisco, CA, USA, January 2009.
- "Pathway Visualization Methods and Tools", **SRI International**, Menlo Park, CA, USA, January 2009.
- "PATIKAweb: A Web-based tool for querying and visualizing PATIKA database", **Gladstone Institute of Cardiovascular Disease**, UCSF, San Francisco, CA, USA, November 2006.
- "PATIKAweb: A Web-based tool for querying and visualizing PATIKA database", **SRI International**, Menlo Park, CA, USA, November 2006.
- "Pathway Ontology, Visualization Notation & Methods in PATIKA", **1st International SBGN Workshop**, Tokyo, Japan, February 2006.
- "PATIKA Ontology, A comparison with BioPAX", **BioPAX F2F Meeting**, Tokyo, Japan, November 2005.
- "PATIKA Ontology, Tools, Modeling Language and Exchange Facilities", **1st International BioPAX Symposium**, Tokyo, Japan, November 2005.
- "The PATIKA Project", Stein Lab, **Cold Spring Harbor Lab**, New York, USA, September 2004.
- "The PATIKA Project", **Special Interest Group on BioPathways**, ISMB 2004, Glasgow, Scotland, July 2004.
- "The PATIKA Project", **Computational Biology and Medicine (IAM)**, METU, Ankara, Turkey, June 2004.
- "Biological Pathway Visualization with PATIKA", **Tom Sawyer Software**, Oakland, California, USA, August 2003.
- "PATIKA: Pathway Analysis Tool for Integration and Knowledge Acquisition", **Special Interest Group on BioPathways**, ISMB 2003, Brisbane, Australia, June 2003.
- "Graph Visualization, Challenges, and Applications", Computer Eng. Dept., **METU**, Ankara, Turkey, March 2002.
- "Disconnected Graph Layout", **Tom Sawyer Software**, Oakland, California, USA, August 2001.

EDUCATIONAL DEVELOPMENT ACTIVITIES

- Attended workshop on **Critical Thinking**, Bilkent University, Ankara, Turkey, March 2000.
- Attended workshop on **Leadership Development**, Rensselaer Polytechnic Institute, Troy, NY, April 1994.

TEACHING

Graduate Courses

Fall 1998 – present

Computer Eng. Dept., Bilkent University

- CS 571 Topics in Graph Theory and Algorithms
- CS 570 Graph Theory
- CS 502 Algorithms II
- CS 573 Algorithms I

Undergraduate Courses

Fall 1994 – present

Computer Eng. Dept., Bilkent University

- CS 476 Automata Theory & Formal Languages
- CS 473 Algorithms I
- CS 319 Object-Oriented Software Engineering
- CS 280 Combinatorics & Graph Theory
- CS 202 Fundamental Structures of Computer Science II
- CS 101 Algorithms and Programming I

Rensselaer Polytechnic Institute

Fall 1994 – Spring 1995

- Computing Languages

GRADUATE STUDENT SUPERVISION

In Progress

Computer Eng. Dept., Bilkent University

- Hasan Balci (Ph.D. candidate), 09/2016 – present
- Asma Jodeiri Akbarfam (Ph.D. candidate), 09/2020 – present
- H. Eren Calik (M.S. candidate), 09/2019 – present
- Hamza Islam (M.S. candidate), 09/2021 – present
- Osama Zafar (M.S. candidate), 09/2021 – present

Completed

Computer Eng. Dept., Bilkent University

- Mubashira Zaman, (M.S.), October 2021, "An Orthogonal Layout Algorithm for Small Compound Graphs"
- Yusuf Sait Canbaz, (M.S.), September 2021, "Visuall: A Quickly Customizable Library for Jumpstarting Visual Graph Analysis Components"
- Alihan Okka, (M.S.), October 2020, "A Compound Graph Layout Algorithm with Support for Ports"
- Utku Calis, (M.S.), September 2019, "Semantic Validation of Biological Maps in SBGN"
- Enes Karaca, (M.S.), February 2019, "Efficient Querying of SBGN Maps Stored in a Graph Database"
- Ilkin Safarli, (M.S.), July 2018, "Methods and Tools for Synchronized Visualization of Evolving Networks"
- Leonard Dervishi, (M.S.), July 2018, "Improvements on PathwayMapper: A Collaborative Pathway Curation Tool"
- Metin Can Siper, (M.S.), July 2017, "Libraries and Tools for Viewing and Editing Biological Maps in SBGN"
- Istemi Rahman Bahceci, (M.S.), August 2016, "Software Tools for Visual Analysis of Cancer Genomics Data in the Context of Pathways"
- Can Cagdas Cengiz (M.S.), July 2014, "A Layout Algorithm for Graphs with Overlapping Clusters"
- Begum Genc (M.S.), July 2014, "Automated Layout of Process Description Maps Drawn in SBGN"
- Mecit Sari (M.S.), July 2014, "Methods & Tools for Visualization and Management of SBGN PD Maps"
- Merve Cakir (M.S.), July 2013, "Integrating Biological Pathways and Genomic Profiles with ChiBE 2"
- Alper Karacelik (M.S.), August 2012, "An Improved Spring Embedder Layout Algorithm for Compound Graphs"
- Selcuk Onur Sumer (M.S.), March 2012, "Chisio Web: Customizable Web-Based Visualization of Relational Information"
- Ozgun Babur (Ph.D.), January 2010, "Causality Analysis in Biological Networks"
- Alptug Dilek (M.S.), August 2009, "VISIBIOweb: a web-based visualization and layout service for biological pathways"
- Esat Belviranli (M.S.), August 2009, "A Circular Layout Algorithm for Clustered Graphs"
- Ahmet Cetintas (M.S.), July 2007, "Algorithms for Effective Querying of Graph-Based Pathway Databases"
- Cihan Kucukkececi (M.S.), June 2007, "Chisio: A Visual Framework for Compound Graph Editing and Layout"
- Emek Demir (Ph.D.), September 2005, "An Ontology for Computer-Aided Modeling of Cellular Processes"
- Erhan Giral (M.S.), August 2005, "A Layout Algorithm for Undirected Compound Graphs"
- Zeynep Erson (M.S.), July 2005, "PATIKAwEB: A Web Service for Accessing and Visualizing Pathway Data in PATIKA Database"
- Asli Ayaz (M.S.), August 2004, "Clustering Protein-Protein Interactions Based on Conserved Domain Similarities"
- Ozgun Babur (M.S.), September 2003, "Methods for Signaling Pathway Analysis using Microarray Data"
- Gurcan Gulesir (M.S.), September 2003, "A Framework for Management of Multiple Views of Cellular Pathway Graphs"
- Cihad Baskoy (M.S.), January 2003, "Polygon Packing Approach to Disconnected Graph Layout"
- Burkay Genc (M.S.), September 2002, "Complexity Management Techniques in Graph Visualization"
- Alpay Erdem [co-advised with A. Gursoy] (M.S.), April 2002, "Time Domain Based Web Usage Mining for Web Site Improvement"
- H.Mehmet Yuksel (M.S.), January 2002, "Extending Hierarchical Graph Layout for Drawing UML Activity Diagrams"

PUBLICATIONS

PhD Dissertation

- "Cyclic structure and coloring of graphs and their parallel implementations", August 1995, Mukkai S.

Edited Books

- S.C. Sahinalp, S. Muthukrishnan, and U. Dogrusoz (Eds.), [Proceedings of Fifteenth Annual Symposium on Combinatorial Pattern Matching \(CPM '04\)](#), **LNCS**, vol. 3109, ISBN 3-540-22341-X, Springer, 2004.

Journal Special Issues

- S.C. Sahinalp, U. Dogrusoz, and S. Muthukrishnan (Eds.), [Special Issue on Combinatorial Pattern Matching](#), **Theoretical Computer Science**, volume 368, issue 3, pp. 195-248, 10 December 2006.

Chapters in Books

- V. Toure, A. Drager, A. Luna, U. Dogrusoz, A. Rougny, "[The Systems Biology Graphical Notation: Current Status and Applications in Systems Medicine](#)", in *Systems Medicine: Integrative, Qualitative and Computational Approaches*, **Elsevier**, 2020.
- M.S. Krishnamoorthy, F. Oxaal, U. Dogrusoz, D. Pape, A. Robayo, R. Koyanagi, Y. Hsu, D. Hollinger, and A. Hashimi, "GraphPack: Design and Features", Chapter in [Software Visualisation: Series on Software Engineering and Knowledge Engineering](#), Vol. 7, pp. 83-99, **World Scientific**, 1996.

Articles in Refereed Journals

- Ö. Babur, A. Luna, A. Korkut, F. Durupinar, M.C. Siper, U. Dogrusoz, J.E. Aslan, C. Sander, E. Demir, "Causal Relationships in Proteomic Profiles using CausalPath", **Star Protocols**, to appear, 2021.
- H. Balci and U. Dogrusoz, "[fCoSE: a fast compound graph layout algorithm with constraint support](#)", **IEEE Transactions on Visualization and Computer Graphics**, to appear, 2021.
- A. Okka, U. Dogrusoz, and H. Balci, "[CoSEP: a compound spring embedder layout algorithm with support for ports](#)", **Information Visualization**, 20(2-3), pp. 151-169, 2021.
- Ö. Babur, A. Luna, A. Korkut, F. Durupinar, M.C. Siper, U. Dogrusoz, J.E. Aslan, C. Sander, E. Demir, "[Causal interactions from proteomic profiles: molecular data meets pathway knowledge](#)", **Patterns**, 2(6), pp. 100257, 2021.
- H. Balci, M.C. Siper, N. Saleh, I. Safarli, L. Roy, M. Kilicarslan, R. Ozaydin, A. Mazein, C. Auffray, O. Babur, E. Demir and U. Dogrusoz, "[Newt: a comprehensive web-based tool for viewing, constructing, and analyzing biological maps](#)", **Bioinformatics**, 37(10), pp.1475-1477, 2021.
- E. Sülün, E. Tüzün, U. Dogrusoz, "[RSTrace+: Reviewer suggestion using software artifact traceability graphs](#)", **Information and Software Technology**, 130, 2021,
- I. Balaur, L. Roy, A. Mazein, S.G. Karaca, U. Dogrusoz, E. Barillot, A. Zinovyev, "[cdzsbqnm1: bidirectional conversion between CellDesigner and SBGN formats](#)", **Bioinformatics**, 36(8), pp. 2620-2622, 2020.
- F.T. Bergmann, T. Czauderna, U. Dogrusoz, A. Rougny, A. Drager, V. Toure, A. Mazein, M.L. Blinov, A. Luna, "[Systems biology graphical notation markup language \(SBGNML\) version 0.3](#)", **Journal of Integrative Bioinformatics**, 17(2-3), pp. 20200016, 2020.
- I. Rodchenkov, O. Babur, A. Luna, B.A. Aksoy, J. V Wong, D. Fong, M. Franz, M.C. Siper, M. Cheung, M. Wrana, H. Mistry, L. Mosier, J. Dlin, Q. Wen, C. O'Callaghan, W. Li, G. Elder, P.T. Smith, C. Dallago, E. Cerami, B. Gross, U. Dogrusoz, E. Demir, G.D. Bader, C. Sander, "[Pathway Commons 2019 Update: integration, analysis and exploration of pathway data](#)", **Nucleic Acids Research**, 48(D1), pp. D489-D497, 2019.
- A. Rougny, V. Touré, S. Moodie, I. Balaur, T. Czauderna, H. Borlinghaus, U. Dogrusoz, A. Mazein, A. Dräger, M.L. Blinov, A. Villéger, R. Haw, E. Demir, H. Mi, A. Sorokin, F. Schreiber, A. Luna, "[Systems Biology Graphical Notation: Process Description language Level 1 Version 2.0](#)", **Journal of Integrative Bioinformatics**, 16(2), 2019.
- J. Gao, T. Mazor, A. Abeshouse, E. Ciftci, I. de Bruijn, B. Gross, K. Kalletta, P. Kumari, R. Kundra, J. Lindsay, A. Lisman, P. Lukasse, R. Madupuri, A. Ochoa, O. Plantalech, P. Raman, F. Schaeffer, R. Sheridan, J. Su, S.O. Sumer, Y. Sun, S. Tan, S. van Hagen, A. Wang, M. Wilson, H. Zhang, G. Zhao, K. Zhu, K. van Bochove, U. Dogrusoz, T.J. Pugh, A. Resnick, C. Sander, E. Cerami, N. Schultz, "[The cBioPortal for cancer genomics](#)", **Cancer Research**, 79(13 suppl), Abstract 910, July 2019.
- M. Ostaszewski, S. Gebel, I. Kuperstein, A. Mazein, A. Zinovyev, U. Dogrusoz, J. Hasenauer, R. Fleming, N. Le Novère, P. Gawron, T. Ligon, A. Niarakis, D. Nickerson, D. Weindl, R. Balling, E. Barillot, C. Auffray, R. Schneider, "[Community-driven roadmap for integrated disease maps](#)", **Briefings in Bioinformatics**, 20(2), pp. 59-70, March 2019.
- A. Mazein, M. Ostaszewski, I. Kuperstein, S. Watterson, M. Saqi, B. De Meulder, I. Balaur, F. He, A. Parton, N. Lemonnier, D. Lefaudeux, J. Pellet, P. Gawron, S. Gebel, P. Hainaut, M. Ollert, U. Dogrusoz, N. Le Novère, E. Barillot, A. Zinovyev, R. Schneider, R. Balling and C. Auffray, "[Systems medicine disease maps: community-driven comprehensive representation of disease mechanisms](#)", **npj Systems Biology and Applications**, 4(21), 2018.
- U. Dogrusoz, A. Karacelik, I. Safarli, H. Balci, L. Dervishi, M.C. Siper, "[Efficient methods and readily customizable libraries for managing complexity of large networks](#)", **PLOS ONE**, 13(5):e0197238, 2018.
- F. Sanchez-Vega, M. Mina, J. Armenia, W.K. Chatila, A. Luna, K.C. La, S. Dimitriadoy, D.L. Liu, H.S. Kantheti, S. Saghafeina, D. Chakravarty, F. Daian, Q. Gao, M.H. Bailey, W.W. Liang, S.M. Foltz, I. Shmulevich, L. Ding, Z. Heins, A. Ochoa, B. Gross, J. Gao, H. Zhang, R. Kundra, C. Kandath, I. Bahceci, L. Dervishi, U. Dogrusoz, W. Zhou, H.

- Shen, P.W. Laird, G.P. Way, C.S. Greene, H. Liang, Y. Xiao, C. Wang, A. Iavarone, A.H. Berger, T.G. Bivona, A.J. Lazar, G.D. Hammer, T. Giordano, L.N. Kwong, G. McArthur, C. Huang, A.D. Tward, M.J. Frederick, F. McCormick, M. Meyerson, The Cancer Genome Atlas Research Network, E.M. Van Allen, A.D. Cherniack, G. Ciriello, C. Sander, N. Schultz, "[Oncogenic Signaling Pathways in The Cancer Genome Atlas](#)", **Cell**, 173(2), pp. 321-337, 2018.
- F. Sanchez-Vega, M. Mina, J. Armenia, W.K. Chatila, A. Luna, K.C. La, S. Dimitriadoy, D.L. Liu, H.S. Kantheti, Z. Heins, A. Ochoa, B. Gross, J. Gao, H. Zhang, R. Kundra, C. Kandath, I. Bahceci, L. Dervishi, [U. Dogrusoz](#), W. Zhou, H. Shen, P.W. Laird, A.H. Berger, T.G. Bivona, A.J. Lazar, G. Hammer, T. Giordano, L. Kwong, G. McArthur, C. Huang, M.J. Frederick, F. McCormick, M. Meyerson, The Cancer Genome Atlas Research Network, E. Van Allen, A.D. Cherniack, G. Ciriello, C. Sander and N. Schultz, "[The molecular landscape of oncogenic signaling pathways in The Cancer Genome Atlas](#)," **Cancer Research**, 78 (13 suppl), Abstract 3302, 2018.
 - J. Gao, T. Mazor, E. Ciftci, P. Raman, P. Lukasse, I. Bahceci, A. Sigaras, A. Abeshouse, I. de Bruijn, B. Gross, R. Kundra, A. Lisman, A. Ochoa, R. Sheridan, J. Su, S.O. Sumer, Y. Sun, A. Wang, J. Wang, M. Wilson, H. Zhang, P. Kumari, J. Lindsay, K. Kalletta, K. Zhu, O. Plantalech, F. Schaeffer, S. Tan, D. Zaal, S. van Hagen, K. van Bochove, [U. Dogrusoz](#), T.J. Pugh, A. Resnick, C. Sander, N. Schultz, E. Cerami, "[The cBioPortal for Cancer Genomics: An intuitive open-source platform for exploration, analysis and visualization of cancer genomics data](#)", **Cancer Research**, 78(13 Suppl), Abstract 923, 2018.
 - C. Auffray, M. Sagner, S. Abdelhak, I. Adcock, A. Agusti, M. Amaral, S. Antonarakis, R. Arena, F. Argoul, R. Balling, A.L. Barabasi, J. Beckmann, A. Bjartell, N. Iomberg, T. Bourgeron, B. Boutron, S. Brahmachari, C. Bréchet, C. Brightling, M. Cascante, A. Cesario, D. Charron, S.J. Chen, Z. Chen, F. Chung, K. Clément, A. Conesa, A. Cozzzone, M. de Jong, J.F. Deleuze, J. Demotes, A. di Meglio, R. Djukanovic, [U. Dogrusoz](#), E. Epel, A. Fischer, A. Gelemanovic, C. Goble, T. Gojobori, M. Goldman, H. Goossens, F. Gros, Y.K. Guo, P. Hainaut, D. Harrison, H. Hoffmann, L. Hood, P. Hunter, Y. Jacob, H. Kitano, U. Klingmüller, B. Knoppers, W. Kolch, M. Koopmans, D. Lancet, M. Laville, J.M. Lehn, F. Lévi, A. Lisitsa, V. Lotteau, A. Magnan, B. Mayosi, A. Metspalu, Y. Moreau, J. N'Dow, L. Nicod, D. Noble, M. Manuela Nogueira, A. Norrby-Teglund, L. Nottale, P. Openshaw, M. Oztürk, S. Palkonen, S. Parodi, J. Pellet, O. Polasek, N. Price, C. Pristipino, T. Radstake, M. Raes, J. Roca, D. Rozman, P. Sabatier, S. Sasson, B. Schmeck, I. Serageldin, A. Simonds, B. Soares, P. Sterk, G. Superti-Furga, D. Supple, J. Tegner, M. Uhlen, S. van der Werf, P. Villoslada, M. Vinciguerra, V. Volpert, S. Webb, E. Wouters, F. Sanz, F. Nobrega, "[Viva Europa, a Land of Excellence in Research and Innovation for Health and Wellbeing](#)", **Progress in Preventive Medicine**, 2(3), e006, June 2017.
 - J. Gao, E. Ciftci, P. Raman, P. Lukasse, I. Bahceci, A. Abeshouse, H.W. Chen, I. de Bruijn, B. Gross, Z. Heins, R. Kundra, A. Lisman, A. Ochoa, R. Sheridan, O. Sumer, Y. Sun, J. Wang, M. Wilson, H. Zhang, J. Xu, A. Dufilie, P. Kumari, J. Lindsay, A. Cros, K. Kalletta, F. Schaeffer, S. Tan, S. van Hagen, J. Reis-Filho, K. van Bochove, [U. Dogrusoz](#), T. Pugh, A. Resnick, C. Sander, E. Cerami, N. Schultz, "[The cBioPortal for Cancer Genomics: an open source platform for accessing and interpreting complex cancer genomics data in the era of precision medicine](#)", **Cancer Research**, 77(13 Suppl), Abstract 2607, 2017.
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- [U. Dogrusoz](#), "Algorithms for Layout of Disconnected Graphs", Proc. of the Fifth International Conference on Computer Science and Informatics, [CS&I 2000](#), Atlantic City, NJ, USA, vol. 1, pp. 539-542, February 27 – March 3, 2000.
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 - C. Aksay, F. Arik, E. Ataer, A. Ayaz, O. Babur, E. Belviranlı, A. Cetintas, R. Colak, G. Cozen, E. Demir, A. Dilek, [U. Dogrusoz](#), E.Z. Erson, E. Giral, E. Kaya, and H. Yildirim, "PATIKAweb: A Web service for querying, visualizing and analyzing a graph-based pathway database", **Poster Presentation in [ISMB 2005](#)**, Detroit, MI, USA, June 25 – 29, 2005.
 - O. Babur, E. Demir, A. Ayaz, [U. Dogrusoz](#), and O. Sakarya, "Microarray Data Analysis and Pathway Activity Inference in PATIKA", **Poster Presentation in [ISMB 2004](#)**, Glasgow, Scotland, July 31 – August 4, 2004.
 - C. Aksay, A. Ayaz, O. Babur, C. Bilgin, A. Cetintas, A. Civril, R. Colak, G. Cozen, E. Demir, [U. Dogrusoz](#), Z. Erson, O. Gerdaneri, E. Giral, G. Gulesir, G. Nisanci, O. Sakarya, and H.Yildirim, "PATIKA: An informatics infrastructure for cellular networks", **Poster Presentation in [ISMB 2004](#)**, Glasgow, Scotland, July 31 – August 4, 2004.
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GRANTS

- Effective Analysis of Big Data Through Graph Visualization with A Unified Complexity Management Framework** 2021 – 2023
Assignment: Principle Investigator
Sponsors: The Scientific and Technical Research Council of Turkey & Turkcell Technology
Budget: ~\$31,500
- HYDRA: modeling, querying and visualization of financial transactions with graphs to detect and prevent fraud** 2021 – 2022
Assignment: Principle Investigator
Sponsors: The Scientific and Technical Research Council of Turkey & Turkcell Technology
Budget: ~\$65,000
- Big graph visualization and analysis using advanced querying, fast layout and complexity management techniques** 2019 – 2021
Assignment: Principle Investigator
Sponsors: The Scientific and Technical Research Council of Turkey & Huawei-TR
Budget: ~\$108,000
- Efficient Layout Algorithms for Compound Graphs With Support for Ports and Constraints** 2018 – 2020
Assignment: Principle Investigator
Sponsor: The Scientific and Technical Research Council of Turkey)
Budget: ~\$42,000
- Methods and Tools for Effective Analysis of Biological Processes with SBGN Diagrams** 2014 – 2016
Assignment: Principle Investigator
Sponsor: The Scientific and Technical Research Council of Turkey
Budget: ~\$65,000
- CHISIO (Querying, layout, and visualization of clustered or hierarchical relational information)** 2011 – 2014
Assignment: Principle Investigator
Sponsor: The Scientific and Technical Research Council of Turkey
Budget: ~\$120,000
- IST-TURKEY (New Information Society Technologies for Turkey)** 2005 – 2008

Assignment: Investigator

Principle Investigator: Bulent Ozguler, EE Dept, Bilkent Univ.

Sponsor: The Scientific and Technical Research Council of Turkey

Budget: ~\$425,000

PATIKA (Pathway Analysis Tools for Integration & Knowledge Acquisition)

2005 – 2011

Assignment: Principle Investigator

Sponsor: The Scientific and Technical Research Council of Turkey

Budget: ~\$130,000

Complexity Management Techniques in Graph Visualization Cntd.

May – Oct 2001

Assignment: Principle Investigator

Sponsor: Tom Sawyer Software, Oakland, CA, USA

Budget: ~\$36,000

Modeling Cellular Processes

Dec 2001

Assignment: Principle Investigator (jointly with A. Gürsoy and R.Çetin-Atalay)

Sponsor: Bilkent University

Budget: \$2,100

Complexity Management Techniques in Graph Visualization

Nov – Apr 2001

Assignment: Principle Investigator

Sponsor: Tom Sawyer Software, Berkeley, CA, USA

Budget: ~\$42,000

Graph Visualization Technology

1995 – 1998

Assignment: Investigator / Academic Coordinator

Recipient: Tom Sawyer Software, Berkeley, CA, USA

Subcontractors: The Univ. of Texas at Dallas and Arizona State University

Sponsor: Advanced Technology Program, NIST, USA

Budget: ~\$2,000,000

NON-SCHOLARLY ACTIVITIES

- Served on several committees in Bilkent University, including Student Academic Integrity Committee (2018 – present), Traffic Committee (2000 – 2012) and Student Council Election Committee (2003 – 2015).
- Served as a consultant for various institutions and companies such as Memorial Sloan Kettering Cancer Center (New York), Turkcell Technology (Istanbul), Huawei-TR (Istanbul), Microwave Electronic Systems, Inc. – MiKES, (Ankara), Ereğli Steel Company (Kdz. Ereğli), and Tom Sawyer Software (Berkeley, CA).
- President of Turkish Students Association at Rensselaer Polytechnic Institute, Troy, NY (1991 – 1994).