Resume

Aidong Zhang

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Career Highlights

- Since 2019, Dr. Zhang is a William Wulf Faculty Fellow and Professor of Computer Science with joint appointments in Biomedical Engineering and Data Science Institute, University of Virginia.
- Three years experience as a Program Director at the National Science Foundation, directing federal research programs.
- Six years' experience as department chair at SUNY at Buffalo, Department of Computer Science and Engineering.
- SUNY Distinguished Professor (the highest academic rank in the State University of New York system).
- Founding Chair of the ACM Special Interest Group on Bioinformatics, Computational Biology, and Biomedical informatics (SIGBio) from 2011 to 2015, and the Steering Committee Chair of its flagship annual conference ACMBCB from 2010 to 2018.
- Editor-in-Chief, IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB), January 1, 2017 – present.
- Have obtained over $15M research funding for research projects, including NSF CAREER award in 1998.
- Published over 320 peer reviewed publications (including 2 best paper awards, 1 best student paper award, 3 books, 96 journal papers and over 200 conference papers) and is credited with major conceptual and practical advances in her fields, such as WaveCluster, bridging centrality and concepts-bridges.
- Directed 29 PhD dissertations.
- IEEE Fellow (elected in 2009) and ACM Fellow (elected in 2017).

Employment History

2019–present	Professor and a William Wulf Faculty Fellow, Department of Computer Science, School of Engineering, University of Virginia
2019–present	Professor, Department of Biomedical Engineering, School of Engineering, University of Virginia
2015–2018	Program Director, NSF/CISE/IIS (National Science Foundation, Directorate for Computer and Information Science and Engineering, Information and Intelligent Systems division, on leave from UB) Programs I have been involved: Information and Intelligent Systems (IIS) core programs, CRII (Research Initiation Initiative) program, CAREER program, Smart and Connected Health program (SCH), Scalable Parallelism in Extreme program (SPX), Big Data Sciences and Engineering (BIGDATA), Transdisciplinary Research In Principles Of Data Science (TRIPODS), Engineering Research Center program (ERC) I lead the following new programs on Data Science : Harnessingthe Data Revolution (HDR): Data Science Corps (DSC), NSF 19-518
2009–2015	Department chair, Department of Computer Science and Engineering, School of Engineering and Applied Sciences, State University of New York at Buffalo (SUNY at Buffalo or UB) Hired 18 (Two senior and 16 Junior) faculty members in six years and restructured the department's overall research paradigm.
2014–present	SUNY Distinguished Professor, SUNY at Buffalo (the highest academic rank available for any faculty member in the State University of New York system),
2014–present	Adjunct Professor, Department of Biomedical Informatics, School of Medicine, SUNY at Buffalo
2012–2014	UB Distinguished Professor, Department of Computer Science and Engineering, School of Engineering and Applied Sciences, SUNY at Buffalo or UB
2011–present	Adjunct Professor, Department of Biomedical Engineering, School of Engineering and Applied Sciences, SUNY at Buffalo
2002–2012	Professor, Department of Computer Science and Engineering, School of Engineering and Applied Sciences, SUNY at Buffalo
1999–2002	Associate Professor, Department of Computer Science and Engineering, School of Engineering and Applied Sciences, SUNY at Buffalo
1994–1999	Assistant Professor, Department of Computer Science, School of Engineering and Applied Sciences, SUNY at Buffalo
1990–1994	Teaching and Research Assistants, Computer Science Department, Purdue University, West Lafayette, Indiana.

Education

- 1994: Ph.D., Computer Science, Purdue University, West Lafayette, Indiana

Research Interests

Data Science/Data Mining, Machine Learning, Bioinformatics, Health Informatics.

Awards/Honors

- ACM Fellow, 2017 (Citation: For contributions to bioinformatics and data mining.)
- IEEE Fellow, 2009 (Citation: For contributions to multimedia data indexing.)
- Editor-in-Chief, IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB), January 1, 2017 – present.
- Keynote Talk, *On Metric Learning for Complex Data Analysis*, the 2018 IEEE Big Data conference, Seattle, December 12, 2018.
- Keynote Talk, *Deep Learning for Biomedical Applications*, the 8th IEEE International Conference on Computational Advances in Bio and Medical Sciences (ICCABS), Las Vegas, NV, October 18-20, 2018.
- Keynote Talk, *Network Modeling, Fusion and Analysis with Applications*, The 2018 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2018), Barcelona, Spain, August 29, 2018.
- Keynote Talk, *Distance Metric learning and Its Applications*, 2018 International Conference on Intelligent Computing (ICIC 2018), Wuhan, China, August 16, 2018.
- Keynote Talk, *Connecting the Dots: Data-Driven Self Learning for Knowledge Discovery*, the IEEE International Conference on Data Mining (ICDM'17), New Orleans, LA, USA, November 20, 2017.
- Best Paper Award, the 2017 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM 2017), Kansas City, MO, USA, November 13-16, 2017. Paper title: Integrate Multi-omic Data Using Affinity Network Fusion (ANF) for Cancer Patient Clustering, Tianle Ma and Aidong Zhang.
- Keynote Talk, *Data Driven Self-Learning for Knowledge Discovery in Health*, DaSH 2017: Symposium on Data Science for Healthcare, Leir Retreat Center, CT, USA, October 20, 2017.
- Keynote Talk, *From Self-Learning to Knowledge Discovery*, the joint nine IEEE flagship international conferences: IEEE 10th International Conference on Cloud Computing (CLOUD), IEEE 1st International Conference on Edge Computing (EDGE), IEEE 24nd International Conference on Web Services (ICWS), IEEE 14th International Conference on Services Computing (SCC), IEEE 6th International Congress on Big Data (BigData Congress), IEEE 1st International Conference on Cognitive Computing (ICCC), IEEE 1st International Congress on Internet of Things (ICIOT), IEEE 6th International Conference on AI & Mobile Services (AIMS), IEEE 13th World Congress on Services (SERVICES), Honolulu, HI, June 26, 2017.
- Keynote Talk, *Trajectory Analysis: Linking Genomic and Proteomic Data with Disease Progression*, the 2016 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM 2016), Shenzhen, China, December 16, 2016.
- Keynote Talk, *Context Based Learning and Its Applications*, the 28th IEEE International Conference on Tools with Artificial Intelligence (ICTAI2016), San Jose, November 6, 2016.
- Keynote Talk, *Computing with Communities in Internet and Social Networks*, IEEE 2nd International Conference on Collaboration and Internet Computing (IEEE CIC 2016), Pittsburgh, November 2, 2016.

- Best Paper Award, The 2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2016), San Francisco, CA, August 18-21, 2016, paper title: Influence Based Analysis of Community Consistency in Dynamic Networks, Xiaowei Jia, Xiaoyi Li, Nan Du, Yuan Zhang, Vishrawas Gopalakrishnan, Guangxu Xun, and Aidong Zhang.

- Keynote Talk, *Dynamic Tracking and Analysis of Massive Time Series Data*, the 21st International Conference on Database Systems for Advanced Applications (DASFAA), Dallas, April 17, 2016.

- Keynote Talk, *Dynamic Tracking of Functional Modules in Massive Biological Data Sets*, 11th International Symposium on Bioinformatics Research and Applications (ISBRA), Norfolk, Virginia, June 7-10, 2015.

- SUNY Distinguished Professor (This is the highest academic rank available for any faculty member in the State University of New York system, conferred by a vote of the Board of Trustees of the State University of New York. As stated on the SUNY website, the Distinguished Professorship is conferred upon individuals who have achieved national or international prominence and a distinguished reputation within a chosen field. This distinction is attained through significant contributions to the research literature or through artistic performance or achievement in the case of the arts. The candidates' work must be of such character that the individuals' presence will tend to elevate the standards of scholarship of colleagues both within and beyond these persons' academic fields.), 2014.

- Keynote Talk, *Evolutionary Analysis of Functional Modules in Dynamic Protein Interaction Networks and Its Applications in Health*, First Big Data Analytic Technology For Bioinformatics and Health Informatics (KDDBHI) Workshop, in conjunction with KDD 2014, New York City, August 24, 2014.

- Best Student Paper Award, The 14th IEEE International Conference on BioInformatics and BioEngineering (BIBE), Boca Raton, FL, November 10-12, 2014. Paper title: A Novel Semi-supervised Deep Learning Framework for Affective State Recognition on EEG Signals with Two-level Channel Selection, Xiaowei Jia, Kang Li, Xiaoyi Li, and Aidong Zhang.

- Member of SUNY (State University of New York) Research Council (an advisory body to the SUNY Board of Trustees, the Research Foundation Board of Directors, the SUNY Provost and Campus Presidents), 2012-2013.

- UB Distinguished Professor, 2012.

- 2010 Inventor of the year, Niagara Frontier Intellectual Property Law Association (NFIPLA), 2010.

- Association of Computing Machinery, Recognition of Service Award, 2010.

- Keynote Talk, *Computational Analysis of Biological Networks*, the International Joint Conference on Bioinformatics, Systems Biology and Intelligent Computing (IJCBS'09), Shanghai, China, August 3, 2009.

- Keynote Talk, *Computational Approaches for Bridging Genomics and Health*, 5th ACM SIGKDD Workshop on Data Mining in Bioinformatics, Chicago, August 21, 2005.

- Applications Paper Award, Runner-up, 2004. The tenth ACM SIGKDD conference, Seattle, WA. Paper title: Mining Coherent Gene Clusters from Three-Dimensional Microarray Data, by Daxin Jiang, Jian Pei, Murali Ramanathan, Chun Tang, and Aidong Zhang.

- Best Teacher Award, Department of Computer Science and Engineering, 2004.

- Exceptional Scholar Achievement Award, University at Buffalo, 2003.
- SUNY Chancellor's Research Recognition Award, 2002.
- NSF CAREER Award, 1998-2002.
- Association of Computing Machinery, Recognition of Service Award, 2001.
- Top 100 Innovators of Upstate New York, Upstate Alliance for Innovation, 2001.

Inventions and Patents

- A. Zhang, G. Sheikholeslami and S. Chatterjee, WaveCluster: Wavelet-Based Clustering Method for Managing Spatial Data in Very Large Database, Patent number: 6,882,997, date issued: April 19, 2005.
- A. Zhang, M. Ramanathan, Y. Cho, and W. Hwang, Bridging Centrality: A Concept And Formula To Identify Bridging Nodes In Scale-Free Networks, U.S. Patent No. 7,808,921, date issued October 6, 2010.
- M. Ramanathan, A. Zhang, and P. Chanda, Method for assessing interactions in biological netwroks and hypergraphs, U.S. Serial No. 61/061,508 on June 13, 2008.

Professional Memberships

- IEEE Fellow, 2009
- ACM Fellow, 2017
- Upsilon Pi Epsilon (Computing Science Honor Society)
- Buffalo Center of Excellence in Bioinformatics

Research Highlights and Recognition

Zhang's current research focus area is to develop data mining and machine learning approaches to modeling and analysis of structured and unstructured data with a variety of applications, including social networks, geographical information systems, bioinformatics, medicine, and health informatics. Her long-term research goals are twofold: from a scientific perspective, she seeks to advance the fundamental understanding of structured and unstructured data at scale, generally gaining insight into the patterns and models that underpin the given data and information. Secondly, from a computational or engineering perspective, she seeks practical solutions for intelligent modeling and analysis of data and information: automatically mining, extracting, and generalizing knowledge from massive data and information. She designs a diverse set of algorithms, models, and tools which enable domain scientists to efficiently model and analyze their data and information.

Zhang has established an enormously strong track record of collaboration with faculty from biology, biomedical informatics, chemistry, geography, medicine, pharmaceutical sciences, biochemistry, and biostatistics at SUNY at Buffalo (UB). She was the Computer Science Representative in the Steering Committee of the campus wide NSF IGERT grant – Integrative Graduate Education and Research Training (IGERT) in Geographic Information Science (over $4M). She was also PI for several other NSF grants on Digital Government: Very Large Scale Multidimensional Data Management and Retrieval for USGS and NIMA Imagery, International Digital Libraries: Metadata Model, Resource Discovery, and Querying on Large-scale Multidimensional Datasets, and U.S.-Japan Joint Seminar: International Digital Library Annotation and Resource Discovery of Geographical Image Data. She was also co-PI on Digital Government: Digitalization of Coastal Management and Decision Making Supported by Multi-dimensional Geospatial Information and Analysis, in collaboration with Geographical faculty members from Ohio State University.

She has received significant research funding on bioinformatics research. She was the PI of the NIH grant on Computational Approaches to Disease Causes and Treatment ($1.2M), which was a grant to establish the Buffalo Center for Biomedical Computing and she was the director of the center. This effort has intrigued many other following bioinformatics activities. She was PI for the NSF grant on Advanced Approaches for Integration and Analysis of Genomic Data ($1.6M). This research has established a well-known data warehouse for chronic diseases. She was also a co-PI of an NIH grant to develop a system biology approach to identify unique biomarkers specific to HIV/HCV co-infection in patients cohorts from Western New York ($780K). She was the PI of NSF grant on Overlapping Clustering Analysis of Biological Networks ($500K) which uses information on biological networks to identify important proteins and biological molecules. Her bioinformatics skills have helped tremendously on UB's various bioinformatics related research effort. Most recently, she is part of the team to receive an institutional R25 grant on "Enabling Access to Cutting-Edge Biomedical and Behavioral Science" ($2.3M). This award will support a cohort of 20 underrepresented students in STEM in the next five years.

Zhang was elected Fellow of ACM (Association for Computing Machinery) for her contributions to bioinformatics and data mining in 2017. She was also elected Fellow of IEEE (Institute of Electrical and Electronics Engineers) for her contributions to multimedia data analysis in 2009. She won the SUNY Chancellor Research Recognition award in 2002, and she was one of only three UB faculty members to receive this award which recognizes leaders in science, medicine, and engineering. She was honored with the "2010 Inventor of the year" award by the Niagara Frontier Intellectual Property Law Association. This award accentuates the earlier 2001 accolade when she was recognized for being in the "Top 100 Innovators of Upstate New York", by the Upstate Alliance for Innovation. she was promoted to SUNY Distinguished Professor in 2014, the highest academic rank in the State University of New York system.

Her research has been well funded in the last 20 years. She has been able to secure more than $15M of total funding that includes several $1M+ grants from highly competitive federal agencies such as NSF, NIH, DOD, and Air Force. The scale of her funding covers the entire spectrum from leading very large center grants as PI, to individual grants (including the NSF Career Award), and industry projects.

Grant Support

3/1/17-12/31/21:	National Institute of Health 'Enabling Access to Cutting-Edge Biomedical and Behavioral Science' Institutional R25 GM-095459 –Initiative for Maximizing Student Development [IMSD] Faculty participant, PI: Margarita Dubocovich (Pharmacology) Support a cohort of 20 underrepresented students in STEM	$2,363,646
8/15/15-7/31/19:	National Science Foundation 'III:Medium: High-Dimensional Interaction Analysis in Bio-Data Sets' PI: Aidong Zhang, co-PIs: Alan Hutson (biostatistics), Jo Fredenheim (preventive medicine) and Murali Ramanathan (pharmaceutics) (Substitute PI when I work at NSF: Jing Gao)	$1,031,252
5/1/12-4/30/16:	Air Force Office of Scientific Research 'Bio-nanocombinatorics to Achieve Precisely-Assembled Multicomponent, Functional Hybrid Nanomaterials' PI: Paras N. Prasad (chemistry), co-PIs: Tiffany R. Walsh (chemistry), Marc R. Knecht (chemistry), Mark T. Swihart (chemical engineering) and Aidong Zhang	$2,875,000
9/1/12-8/31/16:	National Science Foundation 'III:Small: Dynamic Social Network Mining: Feature Extraction, Modeling and Anomaly Detection' PI: Aidong Zhang	$500,000
6/15/11-5/31/13:	National Science Foundation 'III:Small: Women in Bioinformatics Initiative at ACM-BCB 2011' PI: Wei Wang, co-PIs: Robert Grossman, Andrey Rzhetsky, Cathy Wu, Aidong Zhang	$22,500
8/15/10-7/31/14:	National Science Foundation 'III:Small: Overlapping Clustering Analysis of Biological Networks' PI: Aidong Zhang, co-PI: Michael Buck (biochemistry)	$500,000
4/1/10-3/31/11:	National Science Foundation 'ACM-BCB: Conference on Bioinformatics and Computational Biology' PI: Aidong Zhang, co-PIs: Armin R. Mikler, Chaoyang (Joe) Zhang, Dong Xu, Gultekin Ozsoyoglu	$24,450
7/22/09-6/30/11:	National Institute of Health 'Integration of Clinical, Genomic and Proteomic Data using a Bioinformatic Approach' PI: Stanley Schwartz (medicine), co-PI: Aidong Zhang	$779,970
6/15/09-6/30/10:	UB Interdisciplinary Research Development Fund 'A Dynamic approach to strategic market segmentation: an application of data mining techniques' PI: Arun Jain (marketing), co-PI: Aidong Zhang	$26,000

5/1/03-4/30/10:	National Science Foundation 'Advanced Approaches for Integration and Analysis of Genomic Data' PI: Aidong zhang, co-PIs: M. Trevisan (medicine), R. Zivadinov (radiology), B. Weinstock-Guttman (radiology), M. Ramanathan (pharmaceutics)	$1,628,001
7/1/02-12/31/09:	National Science Foundation 'ITR: Enhancing Crystal Structure Determination through Data Mining, Collaborative Environments, and Grid Computing' PI: R. Miller, co-PIs: J. Anstey, C. Weeks (structural biology), Aidong Zhang and H. Hauptman (structural biology)	$2,018,965
8/1/03-8/31/08:	National Institute of Health 'Computational Approaches to Disease Causes and Treatment' PI: Aidong Zhang, co-PIs: M. Trevisan (medicine), B. Jusko (pharmaceutics)	$1,177,500
9/1/03-8/31/07:	National Science Foundation 'A Semantic Summarization Approach to Data Warehousing and Online Analytical Processing' PI: Aidong Zhang, co-PI: J. pei	$260,000
8/1/02-7/31/05:	National Science Foundation 'Evaluation Methodology for Image Testbed and Content-Based Retrieval' (PI: Aidong Zhang)	$170,000
9/1/01-2/29/08:	National Science Foundation (including UB matching) 'CISE Research Infrastructure–MultiStore: A Research Infrastructure for Management, Analysis and Visualization of Large-Scale Multi-dimensional Data Sets' PI: Aidong Zhang, co-PIs: R. Acharya, A. Garg, D. Mark, R. Miller	$1,591,961
9/1/03-8/31/04:	National Geosaptial-Intelligence Agency (NGA, DOD Agency) 'Content Based Image Retrieval for Man-Made Objects' PI: Ling Bian (geography), co-PI: Aidong Zhang	$49,989
6/15/01-10/31/05:	National Science Foundation 'Digital Government: Digitalization of Coastal Management and Decision Making Supported by Multi-dimensional Geospatial Information and Analysis' co-PI, subcontract amount from Ohio State University: $120,000 PI: R. Li (geography), Ohio State University, co-PIs: K. Bedford, J.R. Ramirez, C.K. Shum, Ohio State University	$1,052,933

9/1/01-8/31/04:	National Science Foundation 'Visual Design Steering As Aid in Complex System Decision Making' PI: K. Lewis (mechanical engineering), co-PIs: C. L. Bloebaum (mechanical engineering), A. Bisantz (industrial engineering), Aidong Zhang, E. Winer	$330,000
1/8/00-7/31/04:	National Science Foundation 'Digital Government: Very Large Scale Multidimensional Data Management and Retrieval for USGS and NIMA Imagery' PI: Aidong Zhang, co-PI: D. Mark (geography)	$500,000
8/15/00-7/31/04:	National Science Foundation 'International Digital Libraries: Metadata Model, Resource Discovery, and Querying on Large-scale Multidimensional Datasets' PI: Aidong Zhang, co-PI: D. Mark (geography), R. Acharya	$400,000
4/1/02-3/31/04:	National Science Foundation 'U.S.-Japan Joint Seminar: International Digital Library Annotation and Resource Discovery of Geographical Image Data" PI: Aidong Zhang, co-PI: D. Mark (geography), W. I. Grosky	$20,000
5/1/98-4/30/03:	National Science Foundation 'CAREER: Consistent and Robust Retrieval, Transmission and Presentation of Multimedia Data' PI: Aidong Zhang	$234,129
1/1/99-12/31/01:	National Science Foundation (including UB matching) 'CISE Research Instrumentation: Experimental Infrastructure for Indexing, Retrieval, and Robust Presentation of Multimedia Data' PI: Aidong Zhang, co-PI: R. Srihari	$78,263
1/1/98-9/30/01:	National Imagery and Mapping Agency (NIMA, DOD Agency) 'A Multi-Resolution Geographical Data Retrieval System' co-PI with L. Bian (PI), Geography, SUNY-Buffalo	$175,125
8/1/96-7/31/97:	National Science Foundation 'Planning Grant for Women Scientists: Developing Interactive Presentation Tools for Educational Digital Libraries' PI: Aidong Zhang	$18,000
1998-2007	National Science Foundation 'IGERT: Integrating Graduate Education and Research Training in Geographical Information Science' Faculty participant and Computer Science Representative in IGERT Steering Committee There are 18 faculty participants from seven departments at SUNY-Buffalo. PI: D. Mark (Geography)	$2,215,436

Other Funding with Companies/University

2002-2004	Air Force (subcontract from Orincon company) 'Data Fusion Phase 2' co-PI with J. Llinas (PI), Industrial Engineering, SUNY-Buffalo	$200,000
2001-2002	Air Force (subcontract from Orincon company) 'Data Fusion Phase 1' co-PI with J. Llinas (PI), Industrial Engineering, SUNY-Buffalo	$33,000
2001-2003	Canadian Government 'Investigations on Prior Knowledge for Levels 2 and 3 Information Fusion' co-PI with J. Llinas (PI), Bruce Pitman (co-PI)	$153,000
2001-2002	Calspan-University at Buffalo Research Center, Inc. (CUBRC) 'Data Mining/Data Fusion Asymmetric Threat' co-PI with J. Llinas (PI), Industrial Engineering, SUNY-Buffalo	$57,411
2000-2001	Calspan-University at Buffalo Research Center, Inc. (CUBRC) 'Linking Dynamic Data Mining (DDM) and Data Fusion to Deal with the Asymmetric Threat' co-PI with J. Llinas (PI), Industrial Engineering, SUNY-Buffalo	$30,000
2000-2001	SUNY-Buffalo - Office of the Provost 'Establishing a Gene Expression Data Testbed for Pharmaceutical Applications' (PI, co-PI: R. M. Straubinger, Department of Pharmaceutics)	$20,000
1998-1999	SUNY-Buffalo - Office of the Provost 'Creating a Web-Based Image Database for Benchmarking Image' co-PI with C. Jorgensen (PI), D. Walters, R. Srihari	$20,000
1997-1998	Xerox Foundation 'Content-based and Multimedia Database Design and Integration' with B. Jayaraman	$20,000
1996-1999	National Center for Geographic Information and Analysis (seed fund) 'A Web-based Geographical Images Retrieval System' with L. Bian, Geography, SUNY-Buffalo	$5,500

Publications

Books

[1] A. Zhang, Protein Interaction Networks: Computational Analysis, Cambridge University Press, 2009.

[2] A. Zhang, Advanced Analysis of Gene Expression Microarray Data, World Scientific Publishing Co., Inc. 2006.

[3] A. Zhang, A. Silberschatz and S. Mehrotra: Continuous Media Databases, edited book, Kluwer Academic Publishers, 2000.

Edited Journal/Book Chapters

[4] Vishrawas Gopalakrishnan and Aidong Zhang, On Emerging Use-Cases & Techniques in Large Networked Data in Biomedical and Social Media Domain, in Big Data and Computational Intelligence in Networking, book edited by Yulei Wu, Fei Hu, Geyong Min, and Albert Y. Zomaya, CRC, 2017. (invited chapter)

[5] L. Shi, X. Lei, and A. Zhang, Protein Functional Module Analysis with Protein-Protein Interaction (PPI) Networks, in Algorithmic and Artificial Intelligence Methods for Protein Bioinformatics, book edited by Yi Pan, Min Li, and Jianxin Wang, John Wiley & Sons, 2014, pp. 393-412. (invited chapter)

[6] Y. Cho and A. Zhang, Functional Influence Based Approach to Identify Overlapping Modules in Biological Networks, in Link Mining: Models, Algorithms and Applications, book edited by Philip S. Yu, Christos Faloutsos, and Jiawei Han, Springer, 2010, pp. 535-556. (invited chapter)

[7] A. Zhang, L. Zhu, A. Aygun, G. Sheikholeslami, and Y. Song, Image Databases, in Handbook of Database Systems, book edited by Joachim Hammer and Markus Schneider, CRC press, 2013. (invited chapter)

[8] P. Chanda and A. Zhang, Using Machine Learning Methods to Select SNPs in Disease Association Study, in Machine Learning in Bioinformatics, book edited by Yan-Qing Zhang and Jagath C. Rajapakse, John Wiley & Sons, 2008, pp. 389-412. (invited chapter)

[9] C. Lin, Y. Cho, W. Hwang, P. Pei, A. Zhang, Clustering Methods in Protein-protein Interaction Networks, in Knowledge Discovery in Bioinformatics: Techniques, Methods and Application, book edited by Yi Pan and Tony Hu, John Wiley & Sons, 2007, pp. 319-355. (invited chapter)

[10] M. Ramanathan, L. Zhang, A. Zhang. VizStruct: A Multidimension Visualization Algorithm for Gene Expression, in Advanced Methods of Pharmacokinetic & Pharmacodynamic Systems Analysis Volume III, Kluwer Academic Press, Norwell, MA, 2004, pp. 197-207. (invited chapter)

[11] A. Zhang, Guest editor: Special Issue on Bioinformatics, the International Journal on Distributed and Parallel Databases, Vol. 13, No. 1, January, 2003.

[12] C. Tang, L. Zhang, A. Zhang and M. Ramanathan, Interrelated Clustering: An Approach for Gene Expression Data Analysis, in Computational Biology and Genome Informatics, book edited by Cathy H. Wu, Paul Wang, and Jason T. L. Wang, World Scientific, 2003, pp. 183-206. (invited chapter)

[13] Guest editor (with HongJiang Zhang): special issue on Content-based Image Retrieval, ACM Multimedia Systems Journal, Vol. 8, No. 6, 2002.

[14] A. Zhang, Y. Song, and R. Aygun, Streaming Multimedia Presentations in Distributed Database Environments, book edited by Borko Furht and Oge Marques, CRC Press, 2003, pp. 807-830. (invited chapter)

[15] A. Zhang, Y. Song, and R. Aygun, Feature-based Retrieval in Visual Database Systems, in Multimedia Information Retrieval and Management, book edited by D. Feng, W. C. Siu and H.J. Zhang, Springer, 2003, pp. 226-245. (invited chapter)

[16] Y. Song and A. Zhang, SceneryAnalyzer: a System Supporting Semantics-based Image Retrieval, in Intelligent Multimedia Documents, book edited by Chabane Djeraba, Kluwer Academic Publishers, 2002, pp. 43-58. (invited chapter)

[17] A. Zhang, L. Zhu and D. Mark *WebView*: A Globally Accessible Geographic Image Database Environment, in Advances in Digital Government: Technology, Human Factors, and Policy, book edited by Bill McIver and Ahmed Elmagarmid, Kluwer Academic Publishers, 2002, pp. 197-214. (invited chapter)

[18] Contributing editor, Multimedia Database Systems Chapter in *Readings in Multimedia Computing*, book edited by Kevin Jeffay and HongJiang Zhang, Morgan Kaufmann Publishers, September 2001.

[19] A. Zhang, Wendy Chang, G. Sheikholeslami, and T.F. Syeda-Mahmood, *NetView*: Integrating Large-Scale Distributed Visual Databases, in Readings in Multimedia Computing, edited by Kevin Jeffay and HongJiang Zhang, Morgan Kaufmann Publishers, September 2001, pp. 438-450. (invited chapter)

[20] Guest editor (with Avi Silberschatz and Sharad Mehrotra): special issue on Continuous-media Databases and Applications, the International Journal on Multimedia Tools and Applications, Vol. 11, No. 1, May 2000.

[21] B. Bhargava, M. Annamalai, Shalab Goel, S. Li, E. Pitoura, A. Zhang, and Y. Zhang, DL-Raid: An Environment for Supporting Digital Library Services, in Issues in Digital Libraries: Lecture Notes in Computer Science 916, Springer Verlag, 1995, pp. 281-300.

Refereed Journal Articles

[22] Kishlay Jha, Guangxu Xun, Vishrawas Gopalakrishnan, and Aidong Zhang, DWE-Med: Dynamic Word Embeddings for Medical Domain, ACM Transactions on Knowledge Discovery from Data (TKDD), accepted.

[23] Ye Yuan, Guangxu Xun, kebin Jia, and Aidong Zhang, A Multi-view Deep Learning Framework for EEG Seizure Detection, IEEE Journal of Biomedical and Health Informatics (BHI), Vol. 23, No. 1, January 2019, pp. 83–94.

[24] Tianle Ma and Aidong Zhang, Affinity Network Fusion and Semi-supervised Learning for Cancer Patient Clustering, METHODS journal, Elsevier, Volume 145, August 2018, Pages 16-24.

[25] Qiuling Suo, Fenglong Ma, Ye Yuan, Mengdi Huai, Weida Zhong, Aidong Zhang, and Jing Gao, Deep Patient Similarity Learning for Personalized Healthcare, IEEE Transactions on Nanobiomedicine, Volume: 17, Issue 3, July 2018.

[26] Houping Xiao, Jing Gao, Qi Li, Fenglong Ma, Lu Su, Aidong Zhang, Towards Confidence Interval Estimation in Truth Discovery, IEEE Transactions on Knowledge and Data Engineering (TKDE), May 2018.

[27] Ye Yuan, Guangxu Xun, Qiuling Suo, kebin Jia, and Aidong Zhang, Wave2Vec: Deep Representation Learning for Clinical Temporal Data, special issue on Deep learning for Biological/Clinical Data, Neurocomputing, Vol. 324, January 2019, pp. 31-42.

[28] Vishrawas Gopalakrishnan, Kishlay Jha, Guangxu Xun, Hung Q. Ngo, and Aidong Zhang, Towards Self-Learning Based Hypotheses Generation in Biomedical Text Domain, Bioinformatics, Oxford University Press, Vol. 34, Issue 12, 15 June 2018, Pages 2103–2115, Published online: December 2017.

[29] Yuan Zhang, Boyu Zhu, Yixin Fang, Suxin Guo, Aidong Zhang, Sheng Zhong, Secure Inter-domain Forwarding Loop Test in Software Defined Networks, IEEE Transactions on Dependable and Secure Computing, July 2017.

[30] Tianle Ma and Aidong Zhang, Reconstructing Context-specific Gene Regulatory Network and Identifying Modules and Network Rewiring Through Data Integration, METHODS journal, Elsevier, Volume 124, July 2017, pp. 36-45.

[31] Guangxu Xun, Xiaowei Jia, Vishrawas Gopalakrishnan, and Aidong Zhang, A Survey on Context Learning, IEEE Transactions on Knowledge and Data Engineering (TKDE), Vol. 29, No. 1, January 2017, pp. 38-56.

[32] Tianle Ma and Aidong Zhang, Omics Informatics: From Scattered Individual Software Tools to Integrated Workflow Management Systems, IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB), February 26, 2016.

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Refereed Conference and Workshop Articles

Conferences that required full paper submissions for referee

(Note: Acceptance rate included where known in recent years.)

[122] Liuyi Yao, Yaliang Li, Yezheng Li, Mengdi Huai, Hengtong Zhang, Jing Gao, and Aidong Zhang, DTEC: Distance Transformation Based Early Time Series Classification, the SIAM International Conference on Data Mining (SDM19), Alberta, Canada, May 2-4, 2019 (Acceptance rate: 90/397 = 22.7%)

[123] Tianle Ma and Aidong Zhang, AffinityNet: Semi-supervised Few-shot Learning for Disease Type Prediction, the Thirty-Third AAAI Conference on Artificial Intelligence (AAAI-19), Honolulu, Hawaii, January 27 – February 1, 2019. (Acceptance rate: 1150/7095 = 16.2%)

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[125] Ye Yuan, Fenglong Ma, Guangxu Xun, Yaqing Wang, Kebin Jia, Lu Su, and Aidong Zhang, Multivariate Sleep Stage Classification using Hybrid Self-Attentive Deep Learning Networks, the 2018 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM 2018), Madrid, Spain, December 3-6, 2018 (Full paper, acceptance rate: 19.6%)

[126] Liuyi Yao, Sheng Li, Yaliang Li, Mengdi Huai, Jing Gao, and Aidong Zhang, Representation Learning for Treatment Effect Estimation from Observational Data, Thirty-second Conference on Neural Information Processing Systems (NIPS2018), Montréal, Canada, December 3-8, 2018. (Acceptance rate: 1011/4856 = 20.81%)

[127] Qiuling Suo, Weida Zhong, Fenglong Ma, Ye Yuan, Mengdi Huai, and Aidong Zhang, Multi-task Sparse Metric Learning on Measuring Patient Similarity Progression, the 2018 IEEE International Conference on Data Mining (ICDM'18), Singapore, November 17-20, 2018. (Full paper, acceptance rate: 8.86%)

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[129] Kishlay Jha, Yaqing Wang, Guangxu Xun, and Aidong Zhang, Interpretable Word Embeddings For Medical Domain, the 2018 IEEE International Conference on Data Mining (ICDM'18), Singapore, November 17-20, 2018. (Short paper, acceptance rate: 11.08%)

[130] Kishlay Jha, Guangxu Xun, Yaqing Wang, Vishrawas Gopalakrishnan, and Aidong Zhang, Concepts-Bridges: Uncovering Conceptual Bridges Based on Biomedical Concept Evolution, Proceedings of the 24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2018), London, UK, August 19-23, 2018. (Full paper, acceptance rate: 107/983 = 10%)

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[132] Fenglong Ma, Jing Gao, Qiuling Suo, Quanzeng You, Jing Zhou, and Aidong Zhang, Risk Prediction on Electronic Healthcare Records with Prior Medical Knowledge, Proceedings of the 24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2018), London, UK, August 19-23, 2018. (Full paper, acceptance rate: 107/983 = 10%)

[133] Liuyi Yao, Lu Su, Qi Li, Yaliang Li, Fenglong Ma, Jing Gao, and Aidong Zhang, Online Truth Discovery on Time Series Data, the eighteenth SIAM International Conference on Data Mining (SDM18), San Diego, California, USA, May 3-5, 2018. (acceptance rate: 87/375 = 23.2%)

[134] Mengdi Huai, Chenglin Miao, Qiuling Suo, Yaliang Li, Jing Gao, and Aidong Zhang, Uncorrelated Patient Similarity Learning, the eighteenth SIAM International Conference on Data Mining (SDM18), San Diego, California, USA, May 3-5, 2018. (acceptance rate: 87/375 = 23.2%)

[135] Ye Yuan, Guangxu Xun, Fenglong Ma, Qiuling Suo, Hongfei Xue, Kebin Jia, and Aidong Zhang, A Novel Channel-aware Attention Framework for Multi-channel EEG Seizure Detection via Multi-view Deep Learning, IEEE Biomedical and Health Informatics (BHI'18), Las Vegas, NV, USA, March 4-7, 2018.

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[137] Qiuling Suo, Fenglong Ma, Ye Yuan, Mengdi Huai, Weida Zhong, and Aidong Zhang, Personalized Disease Prediction Using A CNN-Based Similarity Learning Method, the 2017 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM 2017), Kansas City, MO, USA, November 13-16, 2017. (acceptance rate: 19%)

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[139] Ye Yuan, Guangxu Xun, Kebin Jia, and Aidong Zhang, A Novel Wavelet-based EEG Analysis for Epileptic Seizure Detection using Multi-context Learning, the 2017 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM 2017), Kansas City, MO, USA, November 13-16, 2017. (acceptance rate: 19%)

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[143] Guangxu Xun, Yaliang Li, Jing Gao and Aidong Zhang, Collaboratively Improving Topic Discovery and Word Embeddings by Coordinating Global and Local Contexts, Proceedings of the 23th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2017), Halifax, Nova Scotia - Canada, August 13-17, 2017. (acceptance rate: 64/748 = 8.5%)

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[318] R. Ma, T. Ali, X. Niu, V. Velissariou, K. Chang, C. Kuo, X. Xu, A. Elaksher, R. Li, K. Bedford, C.K. Shum, J.P. Ramirez, A. Zhang, A Spatio-Temporal Decision Making System for Coastal Change Monitoring and Coastal Management, in the proceedings of the National Science Foundation Conference dg.o 2002, May 19-22, 2002. (demo paper)

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[328] A. Zhang and Y. Xue, An Office Intelligent Information System, in Proceedings of International Conference on Computer and Communications, Beijing, China, 1986, pp. 484-491.

Other Publications

[329] N. Du, S. D Mahajan, S. A. Schwartz, B. B Nair, C. B. Hsiao and A. Zhang. Gene Co-AdaBoost: A Semi-Supervised Approach for Classifying Gene Expression Data. Poster in 2011 ACM Conference on Bioinformatics, Computational Biology and Biomedicine (ACM-BCB 2011), pp. 531-535.

[330] M. Mielke, Y. Song, R. Aygun and A. Zhang, NetMedia: Giving Control to Distributed Multimedia Presentation Systems, the Eleventh International Scientific and Statistical Database Management (SSDBM-99) conference, Cleveland, Ohio, August 1999, pp. 276-276. (demo)

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[333] J. Guan, A. Zhang, and Z. Ma, Meta-Knowledge and Its Applications in Expert Systems, in The Chinese Journal of Computer Science, Vol. 1, No. 1, January 1987, pp. 21-28.

Ph.D. Dissertations Supervised as Major Professor

[1] Biao Cheng (co-advised with R. Acharya, 1996, employed at Microsoft China). Dissertation title: Approaches to Image Retrieval Based on Compressed Data for Multimedia Database Systems.

[2] Wendy C. Chang (1998, employed at Miami Dade College, Chief Information Officer and Vice Provost of Information Technology). Dissertation title: A Framework for Global Integration of Distributed Visual Information Systems.

[3] Gholam Sheikholeslami (1999, employed at Cisco Systems, CA). Dissertation title: Multi-resolution Content-Based Image Retrieval and Clustering in Large Visual Databases.

[4] Markus Mielke (2000, employed at Microsoft Corporation, Seattle). Dissertation title: Transmission Support for Interactive Distributed Multimedia Presentation Systems.

[5] Dantong Yu (2001, employed at New Jersey Institute of technology (NJIT), Associate Professor). Dissertation title: Multidimensional Indexing and Management for Large-Scale Databases.

[6] Lei Zhu (2001, employed at Oracle Corporation). Dissertation title: Keyblock: an Approach for Content-Based Image Retrieval.

[7] Yuqing Song (2002, employed in China). Dissertation title: Monotonic Tree and Its Application to Multimedia Information Retrieval.

[8] Ramazon Aygun (2003, employed at University of Alabama in Huntsville, Associate Professor). Dissertation title: Spatio-Temporal Browsing of Multimedia Presentations.

[9] Srinivas Gollapudi (2004, employed at Microsoft Research). Dissertation title: Selfish Flows: Where QoS Meets Game Theory.

[10] Wei Wang (2004, employed at Motorola research lab). Dissertation title: Automatic Semantic Indexing in Multimedia Information Retrieval.

[11] Li Zhang (2004, employed at Eastern Michigan University, Ypsilanti, MI). Dissertation title: VizStruct: Visual Exploration for Gene Expression Profiling.

[12] Yimin Wu (2004, employed at Microsoft Corporation, Seattle). Dissertation title: High-Dimensional Pattern Analysis in Multimedia Information Retrieval and Bioinformatics.

[13] Daxin Jiang (2005, employed at Microsoft China). Dissertation title: Mining Coherent Patterns and Clusters from Genomic Data.

[14] Chun Tang (2005, employed at Oracle Corporation), Dissertation title: Automatic Phenotype Structure Mining Underlying Gene Expression Profiles.

[15] Yong Shi (2006, employed at Kennesaw State University), Dissertation title: Dynamic Data Mining on Multidimensional Data.

[16] Xian Xu (2006, employed at Microsoft Corporation, Seattle). Dissertation title: Integrating Feature Subset Selection/Extraction with Applications in Bioinformatics.

[17] Pengjun Pei (2007, employed at Microsoft Corporation, Seattle). Dissertation title: Graph-based Analysis of Protein-protein Interaction Data Sets.

[18] Young-rae Cho (2009, employed at Baylor University, Texas). Dissertation title: Functional Module Identification and Function Prediction from Protein Interaction Networks.

[19] Woo-chang hwang (2009, employed at Johns Hopkins University). Dissertation title: Network Mining from Element Level to Group Level.

[20] Pritam Chanda (2010, employed at Johns Hopkins University). Dissertation title: An Information Theoretic Framework for Identification and Modeling of Gene-Gene and Gene-Environment Interactions.

[21] Lei Shi (2011, employed in Industry). Dissertation title: Protein Functionality Analysis Through Protein-Protein Interaction Networks.

[22] Taehyong Kim (2012, postdoc, Stanford University). Dissertation title: Network Analysis by Topological Properties and Computational Modeling.

[23] Liang Ge (2013, employed at Google). Dissertation title: Techniques for Multiple Source Learning.

[24] Kang Li (2014, employed at Google). Dissertation title: Representation Learning on Multiple Sources.

[25] Nan Du (2014, employed at Baidu Research, USA). Dissertation title: Community Analysis on Multiple Sources: Progression, Evolutionary and Mutual Knowledge Learning.

[26] Hui Li (2015, employed at Google), Dissertation title: Heterogeneous Medical Data Analytics for Healthcare: Modeling and Risk Prediction.

[27] Suxin Guo (2015, employed at Ebay), Dissertation title: Learning on Private Data with Homomorphic Encryption and Differential Privacy.

[28] Xiaoyi Li (2015, employed at Google), Dissertation title: Multimodal Feature Learning.

[29] Vishrawas Gopalakrishnan (2017, employed at IBM), Dissertation title: On Unsupervised Algorithms For Semantically Interpretative And Contextually Sensitive Text-Mining.

[30] Tianle Ma (2018), Dissertation title: Multi-omic Integrative Network Analysis.

Professional Activities

Organizations, Society, Editorial Board and Conference Leadership

- Editor-in-Chief, IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB), January 1, 2017 – present.
- Member of ACM New Publications Committee, September, 2018 – present.
- Chair of advisory board, ACM Special Interest Group on Bioinformatics, Computational Biology and Biomedical Informatics (SIGBio), 2015 – present.
- Member of the State University of New York (SUNY) Empire Innovation Program (SUNY EIP) Technical Review Committee, 2018 – 2019.
- Member of the State University of New York (SUNY) Faculty Diversity Program Review Committee, 2015-2016.
- IEEE CS Fellow Evaluation Committee, 2015.
- Steering Committee Chair, IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB), 2014-2016.
- Steering Committee member, IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB), 2012-2013.
- Vice Chair, IEEE International Conference on Data Mining (ICDM), Brussels, Belgium, December 10 - 13, 2012.
- NSF Advisory board member, NSF workshop on engaging CISE researchers in China, 2011.
- Founding Chair, ACM Special Interest Group on Bioinformatics, Computational Biology and Biomedical Informatics, 2011 – 2015.
- ACM SIGMOD Executive Committee member, Jan. 2002 – 2003.
- Executive Committee member and Vice chair for Publicity, IEEE Technical Committee on Bioinformatics (TCBI) in Computer Science society, 2010-present.
- Editor-in-Chief, *ACM SIGMOD DiSC (Digital Symposium Collection)*, Jan. 2002 – 2003.

- Editorial Board, IEEE Transactions on Knowledge and Data Engineering, 2009 – 2013.
- Editorial Board, International Journal of Data Mining and Bioinformatics (IJDMB), Inderscience Publishers, UK, 2009-present.
- Editorial Board, International Journal of Knowledge Discovery in Bioinformatics (IJKDB), IGI Global.
- Editorial Board, International Journal of Bioinformatics Research and Applications (IJBRA), Inderscience Publishers, UK, 2004-present.
- Editorial Board, *ACM Multimedia Systems Journal*, ACM Press/Springer, July, 2001-2005.
- Editorial Board, *the Journal of Multimedia Tools and Applications*, Kluwer Academic Publishers, 1998 – 2012.
- Editorial Board, *the International Journal of Distributed and Parallel Databases*, Kluwer Academic Publishers, 1998 – 2010.
- Member of Editorial Advisory Board for Book: Biological Data Mining in Protein Interaction Networks, Editors: Dr. Xiao-Li Li and Dr. See-Kiong Ng, IGI Global, publisher of the IGI Publishing.
- Editor in Chief, *ACM SIGMOD DiSC (Digital Symposium Collection)*, 1998 – 2001.
- Publicity Chair, the First IEEE International Conference on Healthcare Informatics, Imaging and Systems Biology, San Jose, February 2011.
- Founding and Steering Committee Chair, ACM International Conference on Bioinformatics, Computational Biology, and Biomedical Informatics (ACM-BCB), 2010 – present.
- Area chair, International Conference on Bioinformatics and Bioengineering (BIBE), 2010.
- Track co-chair, Computers, Communications and IT Applications Conference (CCITA), AUC, Cairo, Egypt January 3 - 5, 2010.
- Steering committee, the International Joint Conference on Bioinformatics, Systems Biology and Intelligent Computing (IJCBS'09), Shanghai, China, August 3rd - 6th, 2009.
- Panel chair, the International Joint Conference on Bioinformatics, Systems Biology and Intelligent Computing (IJCBS'09), Shanghai, China, August 3rd - 6th, 2009.
- Panel Chair, The ACM 7th International Conference on Image and Video Retrieval (CIVR 2008), July 7-9, 2008, Niagara Falls, Canada.
- Area chair for Biological Data Mining and Visualization, 2008 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Philadelphia, November 7-9, 2008.
- Track chair, the 2008 IEEE Conference on Bioinformatics and Bioengineering (BIBE 2008), Athens, Greece in October 8-10, 2008.
- Track co-chair, the 5th IEEE International Conference on Communications, Circuits and Systems (ICCCAS), KICC (Kitakyushu International Conference Center), Fukuoka, Japan, July 11-13, 2007.
- Track co-chair, IEEE International Conference on Multimedia & Expo (ICME), Hilton Toronto, Toronto, Canada, July 9-12, 2006.

- Vice program chair (in charge of Temporal, Spatial and Multimedia databases), the 20th IEEE International Conference on Data Engineering (ICDE'2004), Boston, Massachusetts, March 28-29, 2004.
- Technical program co-chair, *ACM Multimedia'2001*, Ottawa, Ont. Canada, September 29 – October 5, 2001.
- co-chair for ACM SIGMOD 2001 Undergraduate Scholarship Program Committee.
- Treasurer, *ACM Multimedia'2000*, October 30 - November 3, 2000, Los Angeles, California.
- Discussion Group Co-Chair, Information Presentation and Visualization, 1999 NSF Information and Data Management Workshop: Research Agenda for the 21st Century, March 7-9, 1999
- Program Vice co-Chair for *the Eighth International Workshop on Research Issues in Data Engineering: Continuous-Media Databases and Applications (RIDE98)*, in conjunction with the 14th IEEE International Conference on Data Engineering, Orlando, Florida, February 1998.
- Panel and Demos Chair for *the Eleventh International Scientific and Statistical Database Management* (SSDBM-99) conference, Cleveland, Ohio, August 1999.
- Local Arrangements Chair for *the 17th IEEE Symposium on Reliable Distributed Systems* (SRDS'98), West Lafayette, Indiana, October 1998.

Conference/Workshop Program Committee

- Senior Program Committee (SPC), the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2019), Alaska, August 3-7, 2019.
- Senior Program Committee (SPC), the 2018 ACM Conference on Information and Knowledge Management (CIKM), urin, Italy, October 22-26, 2018.
- Program committee member for the 2018 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Madrid, Spain, December 3-6, 2018.
- Program committee member for the IEEE International Conference on Data Mining (ICDM'18), Singapore, November 17-20, 2018.
- Program committee member for the 2018 ACM Conference on Information and Knowledge Management (CIKM), Turin, Italy, October 22-26, 2018.
- Senior Program Committee (SPC), the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2018), London, UK, August 19-23, 2018.
- Program committee member for the IEEE International Conference on Data Mining (ICDM'17), New Orleans, LA, USA, November 18-21, 2017.
- Senior program committee member for the 2017 ACM Conference on Information and Knowledge Management (CIKM), Singapore, November 6-10, 2017.
- Program committee member for the 2017 IEEE International Conference on Big Knowledge (ICBK), Hefei (Anhui, China), August 9-10, 2017.
- Program committee member for the 7th ACM Conference on Bioinformatics, Computational Biology and Health Informatics (ACM BCB), Seattle, Washington, October 2-5, 2016.

- Program committee member for the 2016 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Shenzhen, China, December 15-18, 2016.
- Program committee member for the IEEE International Conference on Data Mining (ICDM'16), Barcelona, December 13-15, 2016.
- Program committee member for the 2016 IEEE International Conference on Big Data, Washington D.C., USA, November 15-18, 2016.
- Program committee member for the 2015 IEEE International Conference on Big Data, Santa Clara, CA, Oct. 29 -Nov. 1, 2015.
- Program committee member for the 6th ACM Conference on Bioinformatics, Computational Biology and Health Informatics (ACM BCB), Atlanta, GA, September 9-12, 2015.
- Program committee member for the 2015 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Washington, DC, Nov. 9-12, 2015.
- Program committee member for the IEEE International Conference on Data Mining (ICDM'15), Atlantic City, NJ, USA, November 14-17, 2015.
- Program committee member for the Fifth Workshop on Biological Data Mining and its Applications in Healthcare (BioDM), in conjunction with 2014 IEEE International Conference on Data Mining (ICDM), Shenzhen, P. R. China, December 14-17, 2014.
- Program committee member for the IEEE conference on Data Engineering (ICDE), Seoul, Korea, April 13-16, 2015.
- Program committee member for the 2014 IEEE International Conference on Data Mining (ICDM), Shenzhen, P. R. China, December 14-17, 2014.
- Program committee member for the 2014 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Belfast, UK, Nov. 2-5, 2014.
- Program committee member for the 2014 IEEE International Conference on Big Data, Washington, D.C., October 27-30, 2014.
- Program committee member for the 5th ACM Conference on Bioinformatics, Computational Biology and Health Informatics (ACM BCB), Newport Beach, CA, September 20-23, 2014.
- Program committee member for the IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Belfast, UK, November 2-5, 2014.
- Program committee member for the 18th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), Tainan, Taiwan, May 13-16, 2014.
- Program committee member for the IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Shanghai, China, December 18-21, 2013.
- Program committee member for the International Symposium on Network Analysis and Mining for Health Informatics, Biomedicine and Bioinformatics (Net-HI-BI-BI 2013), in conjunction with BIBM 2013, Shanghai, China, December 18-21, 2013.

- Program committee member for the 2013 IEEE International Conference on Granular Computing (IEEE Grc2013), Beijing, China, December 13-15, 2013.
- Program committee member for the 2nd IEEE International Conference on Big Data Science and Engineering (BDSE-2013), Sydney, Australia, December 3-5, 2013.
- Program committee member for the International Symposium on Network Enabled Health Informatics, Bio-Medicine and Bioinformatics (HI-BI-BI 2013), Niagara Falls, NY, August 26-27, 2013.
- Program committee member for the IEEE International Conference on Data Mining (ICDM'13), Dallas, Texas, USA, December 8-11, 2013.
- Program committee member for the 2013 International Conference on Information and Knowledge Management (CIKM 2013), San Francisco, Oct 27-Nov 1, 2013.
- Program committee member for the 2013 IEEE International Conference on Big Data (IEEE Big Data 2013), Silicon valley, CA, USA, October 6-9, 2013.
- Program committee member for the 21st ACM International Conference on Information and Knowledge Management (CIKM 2012), Maui, USA, October 29- November 2, 2012.
- Program committee member for the 11th International Workshop on Data Mining in Bioinformatics (BIOKDD '12), in conjunction with the 18th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2012), Beijing, China, August 12-16, 2012.
- Program committee member for the IEEE International Conference on Data Mining (ICDM'12), Brussels, Belgium, December 10-13, 2012.
- Program committee member for the IEEE International Conference on Bioinformatics and Biomedicine (BIBM 2012), Philadelphia, October 4-7, 2012.
- Program committee member for the 18th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (ACMKDD), Beijing, China, August 12-16, 2012.
- Program committee member for the 1st International Conference on Health Information Science (HIS 2012), Beijing, China, April 8-10, 2012.
- Program committee member for the 2011 IEEE International Conference on Bioinformatics and Biomedicine (BIBM'11), Altanta, GA, Nov. 12-15, 2011.
- Program committee member for the 17th annual ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (ACM KDD), San Diego, California, August 21-24, 2011.
- Program committee member for the 6th Great Lakes Bioinformatics Conference, Athens, Ohio on May 2-4, 2011.
- Program committee member for the Systems Biology track at the First IEEE International Conference on Healthcare Informatics, Imaging and Systems Biology, San Jose, February 2011.
- Program committee member for the 2010 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Hong Kong, Dec. 18-21, 2010.
- Program committee member for the 16th International Conference on Database Systems for Advanced Applications (DASFAA 2011), Hong Kong, April 22-25, 2011.

- Program committee member for the International workshop on Data Mining in Bioinformatics (BIOKDD'10), Washington, DC, July, 2010.
- Program committee member for the 10th IEEE International Conference on Data Mining (ICDM 2010), Sydney, Australia, December 13-17, 2010.
- Program committee member for the 14th Pacific-Asia Conference on Knowledge Discovery and Data Mining, Hyderabad, India, June 21-24, 2010.
- Program committee member for SIGMOD 2010, Indinapolis, 2010.
- Program committee member for the 15th International Conference on Database Systems for Advanced Applications (DASFAA), Tsukuba Japan, April 1-4, 2010.
- Program committee member for the Multimedia Systems (MMSys 2010), Scottsdale, Arizona, Feb. 22-23 , 2010.
- Program committee member for the 2009 IEEE International Conference on Data Mining (ICDM), Miami, Florida, December 6-9, 2009.
- Program committee member for the 2009 IEEE International Conference on Bioinformatics and Biomedicine, Washington DC, USA, Nov. 1-4, 2009.
- International Program Committee (IPC) for the IASTED International Conference on Internet and Multimedia Systems and Applications (EuroIMSA 2009), Cambridge, United Kingdom, July 13-15, 2009.
- Program committee member for the 2009 IEEE International Conference on Granular Computing, Aug 17-19, 2009, Lushan Mountain/Nanchang, China.
- Program committee member for the 15th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (ACMKDD), June 28-July 1, 2009, Paris, France.
- Program committee member for the 13th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD-09), April 27-30, 2009, Bangkok, Thailand.
- Program committee member for the Ohio Collaborative Conference on Bioinformatics (OCCBIO), Connecting Ohio's Bioinformatics and Bioscience Research Leaders Case Western Reserve University, Cleveland, Ohio, June 15-17, 2009.
- Program committee member for the IEEE workshop on Data Engineering Methods in Bioinformatics (DEBI), in conjunction with the IEEE 25th conference on Data Engineering (ICDE09), March 29, 2009, Shanghai, China.
- International Program Committee (IPC) of the the Mobile Life Conferences and Exhibitions, Antalya, Turkey, September 15-19, 2008.
- Program committee member for the 2008 IEEE International Conference on Granular Computing, Aug 26-28, 2008, Hangzhou, China.
- Program committee member for *the 2008 International Conference on BioMedical Engineering and Informatics* (BMEI 2008), May 28-30, 2008, Sanya, Hannan, China.
- Program committee member for *the 8th SIAM International Conference on Data Mining* (SDM), Atlanta, Georgia, USA, April 24-26, 2008.

- Program committee member for *the IEEE workshop on "Mining and Management of Biological Data* (MMBD), October 28th, 2007, Omaha, Nebraska, in conjunction with the 7th International Conference on Data Mining (ICDM).
- Program committee member for *the 2007 IEEE International Conference on Bioinformatics and Biomedicine* (BIBM), November 2-4, 2007, San Jose, California.
- Program committee member for *the 2nd VLDB data mining on bioinformatics workshop*, September 23-28 2007, University of Vienna, Austria.
- Program committee member for *the 2007 IEEE International on Gradular Computing* (GrC 2007), Silicon Valley, San Jose, California, November 2-4, 2007.
- Program committee member for *IEEE 7th Symposium on Bioinformatics & Bioengineering* (BIBE07), Boston, Massachusetts, October 15-17, 2007.
- Program committee member for *Sixth Computational Systems Bioinformatics Conference* (CSB2007), San Diego, CA from August 13 - 17, 2007.
- Program committee member for *the 33rd International Conference on Very Large Databases* (VLDB'2007), September 25-28, 2007 in Vienna, Austria.
- Program committee member for *the 6th International Workshop on Data Mining in Bioinformatics* (BIOKDD 2006), in conjunction with KDD-2006: 11th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining August 20 - 23, 2006, Philadelphia, PA, USA.
- Program committee member for *the International Program Committee of the MDM/KDD2006 Workshop (The Seventh International Workshop on Multimedia Data Mining*, in conjunction with KDD-2006: 11th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining August 20 - 23, 2006, Philadelphia, PA, USA.
- Program committee member for *the Workshop of Data Mining in Bioinformatics* (VDMB), to be held in cooperation with VLDB 2006, Seoul, Korea, September 11, 2006.
- Program committee member for *the 2006 IEEE International Conference on Granular Computing* (IEEE-GrC 2006), Atlanta, USA, May 10-12, 2006.
- Program committee member for *the 5th IEEE Symposium on Bioinformatics and Bioengineering* (BIBE05), Minneapolis, Minnesota, October 19-21, 2005.
- Program committee member for *the Eleventh ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD2005), Chicago, Illinois, August 21-24, 2005.
- Program committee member for *the 2005 International Workshop on Data Mining and Bioinformatics*, in conjunction with the 2005 International Conference on Computational Science and Applications, May 9-12, 2005, Singapore.
- Program committee member for *the Fourth International Conference on Intelligent Multimedia Computing and Networking* (IMMCN 2005), Salt Lake City, Utah, USA, July 21-26, 2005.
- International program Committee member for the First Euro Conference on Mobile Government (The EURO, mGOV 2005), Sussex University, Brighton, The United Kingdom, 10-12 July 2005.

- Program committee member for *the 11th International Workshop on Multimedia Information Systems* (MIS'05), September, Sorrento, Italy.
- Program committee member for *the 2005 International Conference on Very Large Databases* (VLDB2005), August 30 - Sept 2, 2005 in Trondheim, Norway.
- Program committee member for *the 2nd International Workshop on Data Integration for the the Life Sciences* (DILS 2005), San Diego Supercomputer Center, University of California, San Diego, July 20-22, 2005.
- Program committee member for *the Workshop of Data Mining in Bioinformatics*, held in cooperation with the IEEE International Conference on Data Mining, November 1, 2004 at Brighton, UK.
- Program committee member for *The Fifth International Workshop on Multimedia Data Mining*, in conjunction with KDD-2004: 10th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, August 22 - 25, 2004, Seattle, Washington, USA.
- Program committee member for *the 4th Workshop on Bioinformatics in Data Mining* (BIOKDD 2004), in conjunction with the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, August 22-25, 2004, Seattle, USA.
- Program committee member for *the Tenth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD2004), Seattle, Washington, August 22-25, 2004.
- Program committee member for *ACM SIGMOD Conference* (SIGMOD2004), June 13-18, Paris, France.
- Program committee member for *Storage and Retrieval Methods and Applications for Multimedia 2004*, in SPIE/IS&T Electronic Imaging Conference San Jose, CA (Jan 2004).
- Program committee member for *IEEE Pacific-Rim Conference on Multimedia* (PCM2001), 15 - 18 December 2003, Singapore.
- Program committee member for *ACM Multimedia'2003*, San Francisco, Ca, Nov 2-7, 2003.
- Program committee member for *IEEE International Conference on Computer Vision* (ICCV2003), Beijing, China, October 14-17, 2003.
- International Program Committee (IPC) for *the 3rd International Workshop on Object Models and Multimedia Technologies* (OMMT-2003), September, 2nd 2003, in conjunction with OOIS-2003, Geneva, Switzerland, September 2-5, 2003.
- International Program Committee (IPC) for *the 3rd International Workshop on Multimedia Data and Document Engineering* (MDDE-2003), September, 9th 2003, Berlin, Germany, in conjunction with VLDB-2003, Berlin, September 8, 2003.
- International Program Committee (IPC) for *The Fourth International Workshop on Multimedia Data Mining* (MDM/KDD2003), in conjunction with ACM KDD-2003, August 24 - 27, 2003, Washington, DC.
- Program committee member for *14th International Conference on Database and Expert Systems Applications (DEXA2003)*, 1-5 September 2003, Prague, Czech Republic.
- Program committee member for *2003 IEEE International Conference on Multimedia and Expo* (ICME), Baltimore, Maryland, July 6-9, 2003.

- Program committee member for *the Third International Conference on Intelligent Multimedia Computing and Networking* (IMMCN'2003), in conjunction with the Seventh Joint Conference on Information Sciences (JCIS 2003), Embassy Suites Hotel, Cary, North Carolina, September 26-30, 2003.
- Program committee member for *The 14th International Workshop on Research Issues on Data Engineering: Digital Government Services* (RIDE-DGS'2004), in conjunction with the 20th IEEE International Conference on Data Engineering (ICDE'2004), Boston, Massachusetts, March 28-29, 2004.
- Program committee member for *The Storage and Retrieval for Media Databases 2003*, in SPIE/IS&T Electronic Imaging Conference, San Jose, CA, Jan 2003.
- Program committee member for *the 19th IEEE International Conference on Data Engineering* (ICDE), Bangalore, India, March 5-8, 2003.
- Program committee member for *ACM Multimedia'2002*, December 1-6, 2002, Juan Les Pines, France.
- Program committee member for *the 8th International Workshop on Multimedia Information Systems* (MIS 2002), Tempe, Arizona, Oct. 30 - Nov. 1, 2002.
- Program committee member for *2002 IEEE International Conference on Multimedia and Expo* (ICME), Lausanne, Switzerland, August 26-29, 2002.
- Program committee member for *the International Conference on Intelligent Information Processing* (ICIIT-02), Beijing, Sept. 22-25, 2002.
- Program committee member for *the International Workshop on Bioinformatics in Data Mining* (BIOKDD 2002), July 23, 2002, in Edmonton, Alberta, Canada.
- Program committee member for *workshop on Multimedia Data and Document Engineering*, in conjunction with the 8th International Conference on Extending Database Technology Prague, Czech Republic, March 25-27, 2002.
- Program committee member for *13th International Conference on Database and Expert Systems Applications (DEXA2002)*, Aix-En-Provence, France, September 2-6, 2002.
- Program committee member for *The Storage and Retrieval for Media Databases 2002*, in SPIE/IS&T Electronic Imaging Conference, San Jose, CA, Jan 2002.
- Program committee member for *The 3rd International Workshop on Multimedia Information Retrieval (MIR 2001)*, Ottawa, Canada, October 6, 2001.
- Program committee member for *The 5th International Workshop on Query Processing and Multimedia Issues in Distributed Systems (QPMIDS'2001)*, in conjunction with the 12th International Conference on Database and Expert Systems Applications (DEXA2001), Munich, Germany, September 3-7, 2001.
- Program committee member for *The Second IEEE Pacific-Rim Conference on Multimedia (PCM2001)*, Beijing, China, Oct. 24-26, 2001.
- Program committee member for *The Second International Conference on Web-Age Information Management* (WAIM2001), Xi'an, China, July 9-11, 2001.
- Program committee member for *2001 IEEE International Conference on Multimedia and Expo* (ICME2001), Tokyo, Japan, August 2001.

- Demo program committee member for *26th International Conference on Very large Databases (VLDB)*, Cario, Egypt, September 10-14, 2000.
- Program committee member for *Workshop on Multimedia Computing in the World Wide Web* (MCWWW 2000), September 14, 2000, Seattle, Washington (A satellite workshop of IEEE Symposium on Visual Languages (VL 2000)).
- An Associate Chair for *ACM Multimedia'2000*, October 30 - November 3, 2000, Los Angeles, California.
- An Associate Chair for *ACM Multimedia'99*, Orlando, November 1999.
- Steering committee member for the NCGIA Varenius initiative on Discovering Geographic Knowledge in Data-Rich Environments, Redmond, WA, March 1999.
- Program committee member for *IEEE International Conference on Multimedia & Expo 2000*, July 30 – August 2, 2000, New York City.
- Program committee member for *the Third International Workshop on Query Processing and Multimedia Issues in Distributed Systems* (QPMIDS'99), in conjunction with 10th International Conference DEXA99, Florence, Italy, September 1999.
- Program committee member for *the Eighth International Workshop on Foundations of Models and Languages for Data and Objects – Transactions and Database Dynamics*, Germany, September 1999.
- Program committee member for *the Eleventh International Scientific and Statistical Database Management* (SSDBM-99) conference, Cleveland, Ohio, August 1999.
- Program committee member for *the IEEE International Conference on Multimedia Computing and Systems* (ICMCS99), Florence, Italy, June 1999.
- Program committee member for *the Content-Based Access of Image and Video Libraries (CBAIVL-99) Workshop*, in conjunction with the IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR'99), Fort Collins, Colorado, June 1999.
- Program committee member for *the 19th International Conference on Distributed Computing Systems* (ICDCS), Austin, Texas, May 1999.
- Program committee member for *the 5th International Conference on Foundations of Data Organization and Algorithms* (FODO'98), Kobe, Japan, November 1998.
- Program committee member for *the Workshop on Multimedia Networking* Held in Conjunction with the IEEE Symposium on Reliable Distributed Systems, West Lafayette, Indiana, October 1998.
- Program committee member for *the Minitrack-7: Multimedia DBMS and the WWW in the 32nd Hawaii International Conference on System Sciences* (HICSS-32), Maui, Hawaii, January 1999.
- Program committee member for *the ACM International Conference on Information and Knowledge Management* (CIKM98), Washington D.C., November 1998.
- Program committee member for *the Second International Workshop on Query Processing and Multimedia Issues in Distributed Systems* (QPMIDS'98), in conjunction with 9th International Conference DEXA98, Vienna, Austria, August 1998.

- Program committee member for *the 1998 International Workshop on Multimedia Database Management Systems*, Dayton, OH, August 1998.
- Program committee member for *the Workshop on Resource Management in Computer Systems and Networks* in conjunction with the Eighth IEEE Symposium on Parallel and Distributed Processing (SPDP'96), October 1996.
- Program committee member for *the First International Workshop on Query Processing in Multimedia Information Systems* in conjunction with the 8th International Conference on Database and Expert Systems Applications (DEXA), Toulouse, France, September 1997.

Session Chairs and Panel

- Session chair, Paper session 13: Classification Models, the ACM Conference on Bioinformatics, Computational Biology and Biomedicine (ACM BCB), Chicago, IL, August 1-3, 2011, pp. 69-75.
- Panelist, Panel on Women in Bioinformatics, the ACM Conference on Bioinformatics, Computational Biology and Biomedicine (ACM BCB), Chicago, IL, August 1-3, 2011, pp. 69-75.
- Session Chair, the 15th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (ACMKDD), June 28-July 1, 2009, Paris, France.
- Session chair (Session W2b: Image Processing), *ACM Multimedia'2000*, October 30 - November 3, 2000, Los Angeles, California.
- Panelist of the panel "From Minitel to the World-Wide Web and Beyond: The Ongoing Role of Multimedia Information Systems in Digital Government", in *Sixth International Workshop on MULTIMEDIA INFORMATION SYSTEMS* (MIS'2000), October 26-28, 2000, Chicago.
- Session chair (Session TUA2: Video Processing and Indexing), *the ACM Multimedia'99*, Nov. 2-5, 1999, Orlando.
- Panelist of the panel "Multimedia Databases: Challenges and Promises",in *Fifth International Workshop on MULTIMEDIA INFORMATION SYSTEMS* (MIS'99), October 21-23, 1999, Indian Wells, CA.
- Panelist of the panel "The Role of Multimedia Database Systems in the Next Millennium", in *the 1998 International Workshop on Multimedia Database Management Systems* (IW-MMDBMS'98), August 1998, Dayton, Ohio.
- Session chair (Session 2: Multimedia Indexing and Retrieval), *the 1998 International Workshop on Multimedia Database Management Systems*, Dayton, OH, August 1998.
- Session chair (replace S.F. Chang, Session 7C: Content-based Retrieval Systems), *the ACM Multimedia'98*, Bristol, UK, September 1998.

Other Community Services

- Co-advising exchange PhD students from Italy, University Magna Graecia of Catanzaro, Italy, 2013 – present.
- Program evaluator, Data Mining and Predictive Analytics, St. John's University, NY, 2013.
- Associate Professor Promotion Evaluation, City University of Hong Kong, 2014.

- External examiner of PhD dissertation, Nanyang Technological University, Singapore, 2011, 2013, 2014.
- External PhD defense committee member, Beijing University of Technology, Beijing, China.
- Proposal review panel: King Abdulaziz City for Science and Technology (KACST), the Strategic Technologies Programs for the Kingdom of Saudi Arabia, 2011.
- Full Professor Promotion Evaluation, University of Saskatchewan, Canada, 2012.
- Review Committee: the Finnish Programme for Centres of Excellence in Research in 2012-2017, Academy of Finland, 2011.
- Proposal review Panel, Agency for Science, Technology and Research, Singapore, 2010.
- External Examiner of Ph.D. dissertation, National University of Singapore, Singapore, 2005.
- Proposal Panel for Swiss Federal Institute of Technology, Zurich, Switzerland, 2002.
- NSF and NIH review panels.