REFEREED PUBLICATIONS (underlined names are senior authors)

Refereed Journal Publications

1. Z. Nouri-Lewis and Yi-Cheng Tu. G-PICS: A Framework for GPU-Based Spatial Indexing and Query Processing. Accepted to *IEEE Transactions on Knowledge and Data Engineering*.
2. C. Li, C. Mou, M. Swartz, B. Yu, Y. Bai, **Y. Tu**, and X. Liu. dbMTS: a comprehensive database of putative human microRNA target site SNVs and their functional predictions. *Human Mutation* 41(6):1123-1130.
3. M. Eslami, V. Mahmoodian, I. Dayarian, H. Charkhgard, and **Y. Tu**. Query Batching Optimization in Database Systems. *Computers & Operations Research* 121, September 2020, 104983.
4. J. Meng, N. Pitaksirianan, Z. Nouri, and **Y. Tu**. Counting Frequent Patterns in Large Labeled Graphs: A Hypergraph-Based Approach. *Data Mining and Knowledge Discovery* 34(4):980-1021, May 2020
5. Shuang Na, Kandethody Ramachandran, Ming Ji, and **Yicheng Tu**. Real-Time Activity Recognition Using Smartphone Accelerometer. *International Journal of Trend in Scientific Research and Development* (IJTSRD) 4(1):533-542, December 2019.
6. N. Pitaksirianan, Z. Nouri, and **Y. Tu**. Algorithms and Framework for Computing 2-body Statistics on GPUs. *Distributed and Parallel Databases* 37(4):587-622, Dec. 2019
7. Chengcheng Mou, Shaoping Chen, and **Yi-Cheng Tu**. A Comparative Study of Dual-Tree Algorithms for Computing Spatial Distance Histograms. *Computer Journal* 62(1): 42-64, 2019.
8. Yin Lu, Aditya Chandra Ramachandra, Minh Pham, **Yi-Cheng Tu**, and Feng Cheng. CuDDI: A CUDA-Based Application for Extracting Drug-Drug Interaction Related Substance Terms from PubMed Literature. *Molecules* 24(6): 1081, 2019.
9. Hao Li, Wei Yuan, Bo Zeng, and **Yi-Cheng Tu**. Concurrent Query Processing in A GPU-Based Database System. *PLos ONE* 14(4): e0214720, April 2019.
10. James Kruczek, Matthew Saunders, Meghna Khosla, **Yi-Cheng Tu**, and Sagar A. Pandit. Molecular Dynamics Simulations of Ether- and Ester-Linked Phospholipids. *BBA – Biomembranes*. 1859(12):2297-2307, 2017.
11. Peyman Behzadnia, Wei Yuan, Bo Zeng and **Yi-Cheng Tu**. Energy-Aware Disk Storage Management: Online Approach with Applications in DBMS. *International Journal of Database Management Systems*. 9(1): 1-22, February 2017.
12. Yin Lu, Bryan Figler, Hong Huang, **Yi-Cheng Tu**, Ju Wang and Feng Cheng. Characterization of the mechanism of drug-drug interactions from PubMed using MeSH terms. *PLoS One* 12(4), April 2017.
13. Yin Lu, Dan Shen, Maxwell Pietsch, Chetan Nagar, Zayd Fadli, Hong Huang, **Yi-Cheng Tu**, and Feng Cheng. A novel algorithm for analyzing drug-drug interactions from MEDLINE literature. *Scientific Reports* 5, 17357, November 2015. (IF: 5.58)
14. Z. Xu, **Y. Tu**, and X. Wang. Online Energy Estimation of Relational Operations in Database Systems. *IEEE Transactions on Computers* (*TC*) 64(11):3223-3236,
15. A. Kumar, V. Grupcev, M. Berrada, J. Fogarty, **Y. Tu**, X. Zhu, S. Pandit, and Y. Xia. DCMS: A data analytics and management system for molecular simulation. *Journal of Big Data* 2:9, November 2014.
16. A. Kumar, V. Grupcev, Y. Yuan, **Y. Tu**, Jin Huang, and G. Shen. Computing Spatial Distance Histograms for Large Scientific Datasets On-the-fly. *IEEE Transactions on Knowledge and Data Engineering* (*TKDE*) 26(10):2410-2424, October 2014.
17. **Y. Tu**, X. Wang, and B. Zeng. A System for Energy-Efficient Data Management. *ACM SIGMOD Record* 43(1):21-26.
18. J. Huang, F. Nie, H. Huang, **Y. Tu**, and Y. Lei. Social Trust Prediction Using Heterogeneous Networks. *ACM Transactions on Knowledge Discovery from Data* (*TKDD*) 7(4):17, November 2013.
19. C. H. Nadungodage, Y. Xia, J. Lee, and **Y. Tu**. Hyper-Structure Mining of Frequent Patterns in Uncertain Data Streams. *Knowledge and Information Systems* (*KAIS*) 37(1):219-244, October 2013.
20. V. Grupcev, Y. Yuan, **Y. Tu**, J. Huang, S. Chen, S. Pandit, and M. Weng. Approximate Algorithms for Computing Spatial Distance Histograms with Accuracy Guarantees. *IEEE Transactions on Knowledge and Data Engineering* (*TKDE*) 25(9):1982-1996. September 2013.
21. Z. Xu, **Y. Tu**, and X. Wang. PET: Reducing Database Energy Cost via Query Optimization (software demo). *Proceedings of the Very Large Database Endowment* (*VLDB*). 5(12):1954-1957, August 2012.

22. S. Chen, **Y. Tu**, and Y. Xia. Performance Analysis of Dual-Tree Algorithms for Computing Spatial Distance Histograms. *Very Large Data Base* (*VLDB*) *Journal*. 20(4):471-494, August 2011.
23. R. Cheng, B. Kao, S. Prabhakar, A. Kwan, and **Y. Tu.** Filtering Data Streams for Entity-based Continuous Queries. *IEEE Transactions on Knowledge and Data Engineering* (*TKDE*) 22(2):234-248, February 2010.
24. H. Fang, Q. Wang, **Y. Tu,** and M. F. Horstemeyer. An efficient non-dominated sorting method for evolutionary algorithms. *Journal of Evolutionary Computation*. 16(3):355-384, Fall 2008.
25. **Y. Tu**, J. Yan, G. Shen and S. Prabhakar. Multi-Quality Data Replication in Multimedia Databases. *IEEE Transactions on Knowledge and Data Engineering* (*TKDE*) 19(5):679-694, May 2007.
26. L. Qu and **Y. Tu.** Change Point Estimation of Bi-Level Functions. *Journal of Modern Applied Statistical Methods*. 5(2):347-355, November 2006.
27. **Y. Tu,** J. Sun, M. Hefeeda, and S. Prabhakar. An Analytical Study of Peer-to-Peer Media Streaming Systems. *ACM Transactions on Multimedia Computing, Communications, and Applications* (*TOMCCAP*). 1(4):354-376, November 2005.
28. W. Aref, A. Catlin, A. Elmagarmid, J. Fan, M. Hammad, I. Ilyas, M. Marzouk, S. Prabhakar, **Y. Tu** and X. Zhu. VDBMS: A Testbed Facility for Research in Video Database Benchmarking. *ACM/Springer Multimedia Systems Journal.* 9(6):575-585, June 2004.

Book Chapters

1. **Y. Tu** and Gang Ding. Control-Based Database Tuning Under Dynamic Workloads. Vol. I., *Encyclopedia of Data Warehousing and Mining*, 2nd edition, pp.333-338, 2009.

Refereed Conference Publications

1. Faisal Qarah and **Yi-Cheng Tu**. A Fast Exact Viewshed Algorithm on GPUs. To appear in Procs. *IEEE International Conference on Big Data*, Dec. 9-12, Los Angeles, CA, USA.
2. Jinghan Meng, Napath Pitaksirianan, and **Yi-Cheng Tu**. Generalizing Design of Support Measures for Counting Frequent Patterns in Graphs. In Procs. *IEEE International Conference on Big Data*, Dec. 9-12, Los Angeles, CA, USA.
3. Jinghan Meng, Napath Pitaksirianan, and **Yicheng Tu**. A New Polynomial-Time Support Measure for Counting Frequent Patterns in Graphs. In Procs. 31st *International Conference on Scientific and Statistical Database Management* (*SSDBM*), pp. 214-217, Santa Cruz, CA, USA, July 23-25, 2019.
4. Zhila Nouri and **Yi-Cheng Tu.** GPU-Based Parallel Indexing for Concurrent Spatial Query Processing, In Procs. 30th *International Conference on Scientific and Statistical Database Management* (*SSDBM*), Bolzano, Italy, July 9-11, 2018.
5. Ran Rui and **Yi-Cheng Tu**. Fast Equi-Join Algorithms on GPUs: Design and Implementation. In Procs. 29th *International Conference on Scientific and Statistical Database Management* (*SSDBM*), pp. 17:1-17:12. (**Best Paper Runner Up)**
6. Jinghan Meng and **Yi-Cheng Tu**. Flexible and Feasible Support Measures for Mining Frequent Patterns in Large Labeled Graphs. Procs. of *ACM International Conference on Management of Data* (*SIGMOD*), pp.391-402, Raleigh, NC, USA., May 14-19, 2017.
7. Chengcheng Mou, Shaoping Chen, and **Yi-Cheng Tu**. A comparative study of dual-tree algorithms for computing spatial distance histograms. In Procs. of *4th IEEE International Conference on Big Data* (*BigData*), Washington, DC, USA., December 2016.
8. N. Pitaksirianan, Z. Nouri, and **Y. Tu**. Efficient 2-body statistics computation on GPUs: Parallelization and Beyond. In Procs. 45th *International Conference on Parallel Processing* (ICPP). pp. 380-385, Philadelphia, PA, USA., August 16-19, 2016.
9. P. Behzadnia, W. Yuan, B. Zeng, **Y. Tu**, and X. Wang. Dynamic Power-Aware Disk Storage Management in Database Servers. In Procs. 27th *International Conference on Database and Expert Systems Applications* (DEXA). pp. 315-325, Porto, Portugal, September 5-8, 2016.
10. A. Kumar, J. Ligatti, and **Y. Tu**. Query Monitoring and Analysis for Database Privacy - A Security Automata Model Approach. In Procs. of *16th International Conference on Web Information Systems Engineering* (*WISE*), pp. 2458-2472, Miami, FL, USA., November 2015.
11. R. Rui, H. Li, and **Y. Tu**. Join algorithms on GPUs: A revisit after seven years. In Procs. of *3rd IEEE International Conference on Big Data* (*BigData*), pp. 2541-2550, Santa Clara, CA, USA., October 2015.
12. V. Grupcev, **Y. Tu**, J. C. Fogarty, S. Pandit. Push-based system for molecular simulation data analysis. In Procs. of *3rd IEEE International Conference on Big Data* (*BigData*), pp. 1775-1784,

Santa Clara, CA, USA., October 2015.

13. H. Li, D. Yu, A. Kumar, and **Y. Tu**. Performance Modeling in CUDA Streams – A Means for High-Throughput Data Processing. *IEEE International Conference on Big Data* (*BigData*), pp.301-310, October 2014.
14. A. Kumar, X. Zhu, **Y. Tu**, and S. Pandit. Compression of Molecular Simulation Datasets. *International Conference on Intelligence Science and Big Data Engineering* (*ISciDE*), pp.22-29, July 2013.
15. Zichen Xu, Yi-Cheng Tu, and Xiaorui Wang. Dynamic Energy Estimation of Query Plans in Database Systems. Procs. of *33rd International Conference on Distributed Computing Systems* (*ICDCS*), pp. 83-92, July 2013.
16. Miguel Rodriguez, Daladier Jabba, Elias Nino, Carlos Ardila, and Yi-Cheng Tu. Automata Theory Based Approach to the Join Ordering Problem in Relational Database Systems. Procs. of *International Conference on Data Management Technologies and Applications* (*DATA*). pp.257-265, Reykjavik, Iceland. July 29-31, 2013. (**Best Paper Nominee**).
17. **Y. Tu**, A. Kumar, D. Yu, R. Rui, and R. Wheeler. Data Management Systems on GPUs: Promises and Challenges. *25th Scientific and Statistical Database Management Conference* (*SSDBM*). Baltimore, Maryland, USA., July 29-31, 2013.
18. Zichen Xu, Xiaorui Wang, and Yi-Cheng Tu. Power-Aware Throughput Control for Database Management Systems. Procs. of *10th International Conference on Autonomic Computing* (*ICAC*). June 2013.
19. L. Qu, H. Chen, and **Y. Tu**. Nonparametric Copula Estimation in Sensor Networks. In Proceedings of 7th *International Conference on Mobile Ad-Hoc and Sensor Networks* (*MSN*), pp. 1-8, Dec. 2012.
20. D. Yu, **Y. Tu**, and H. Yang. Parallel computing simulation of electrical excitation and conduction in a 3D human heart. To appear in *7th INFORMS Workshop on Data Mining and Health Informatics*. Phoenix, AZ, USA. October 2012.
21. **Y. Tu**, S. Chen, S. Pandit, A. Kumar and V. Grupcev. Efficient SDH Computation In Molecular Simulations Data (short paper). To appear in *ACM Conference on Bioinformatics, Computational Biology, and Biomedicine* (*ACM-BCB*). Orlando, FL, USA. October 2012.
22. J. Ge, Y. Xia, and **Y. Tu**. A Discretization Algorithm for Uncertain Data. In Proceedings of *21st International Conference on Database and Expert Systems Applications* (*DEXA*), pp. 485-499.
23. J. Huang, F. Nie, H. Huang, and **Y. Tu**. Trust Prediction via Aggregating Heterogeneous Social Networks. In Proc. *ACM Conf. Information and Knowledge Management* (*CIKM*). pp. 1774-1778, Maui, Hawaii, USA, October 2012.
24. A. Kumar, V. Grupcev, Y. Yuan, **Y. Tu** and G. Shen. Distance Histogram Computation Based on Spatiotemporal Uniformity in Scientific Databases. In Procs. *International Conference on Extending Database Technology* (*EDBT*), pp. 288-299, Berlin, Germany, March 26-30, 2012.
25. Lixi Wang, Jing Xu, Ming Zhao, Yi-Cheng Tu, and Jose Fortes. Fuzzy Modeling Based Resource Management for Virtualized Database Systems. In Procs. *19th IEEE International Symposium on Modeling, Analysis, and Simulation of Computer and Communication Systems* (*MASCOTS*), pp. 32-42, Singapore, July 25-27, 2011.
26. **Y. Tu**, X. Wang, and Z. Xu. Power-Aware DBMSs: Potential and Challenges. In Procs. *Scientific and Statistical Database Management Conference* (*SSDBM*). pp. 598-599, Portland, WA, July 20-22, 2011.
27. Z. Xu, **Y. Tu**, and X. Wang. Exploring Power-Performance Tradeoffs in Database Systems. In *Procs. of 26th International Conference on Data Engineering* (*ICDE*), pp. 485-496, Long Beach, CA, March 2010.
28. B. Qin, Y. Xia, R. Sathyesh, S. Prabhakar, and **Y. Tu**. uRule: A Rule-Based Classification System for Uncertain Data (software demo). In Procs. *International Conference on Data Mining* (*ICDM*). Miami, FL, December 2010.
29. **Y. Tu**, S. Chen and S. Pandit. Computing Spatial Distance Histograms Efficiently in Scientific Databases. In Proceedings of *International Conference of Data Engineering* (*ICDE*), pp.796-807, Shanghai, China, March 29-April 4, 2009.
30. B. Qin, Y. Xia, S. Prabhakar, **Y. Tu**. A Rule-based Classification Algorithm for Uncertain Data. In *Proceedings of Workshop of Management and Mining of Uncertain Data*, in conjunction with ICDE'09. pp.1633-1640.
31. **Y. Tu**, S. Liu, S. Prabhakar, B. Yao, and W. Schroeder. Using Control Theory for Load Shedding in Data Stream Management. In Proceedings of *International Conference on Data Engineering* (*ICDE*), pp.1491-1492, Istanbul, Turkey, April 2007.

32. Y. Xia, **Y. Tu**, M. Atallah, and S. Prabhakar. Efficient Data Compression in Location Based Services. In Proceedings of *2nd International Conference on Geosensor Networks*, Boston, MA, October 2006.
33. **Y. Tu**, S. Liu, S. Prabhakar, and B. Yao. Load Shedding in Stream Databases - A Control-Based Approach. In Proceedings of *International Conference on Very Large Databases* (*VLDB*), pp.787-798, Seoul, Korea, September 2006.
34. **Y. Tu** and S. Prabhakar. Control-Based Load Shedding in Data Stream Management Systems. PhD Symposium/Workshop, in conjunction with ICDE 2006.
35. **Y. Tu**, J. Yan, and S. Prabhakar. Quality-Aware Replication of Multimedia Data. In Proceedings of *International Conference of Database and Expert Systems Applications* (*DEXA*) 2005, pp.240-249.
36. **Y. Tu**, M. Hefeeda, Y. Xia, S. Prabhakar, and S. Liu. Control-based Quality Adaptation in Data Stream Management Systems. In Proceedings of *International Conference of Database and Expert Systems Applications* (*DEXA*) 2005, pp.746-755.
37. R. Cheng, B. Kao, S. Prabhakar, A. Kwan, and **Y. Tu**. Adaptive Stream Filters for Entity-Based Queries with Non-Value Tolerance. Proceedings of *International Conference on Very Large Databases* (*VLDB*), pp.37-48.
38. L. Qu and **Y. Tu.** Change Point Estimation of Bar Code Signals. In Proceedings of *International Conference on Scientific Computing* (*CSC*) 2005, pp.109-114
39. **Y. Tu**, S. Prabhakar, A. Elmagarmid and R. Sion. QuaSAQ: An Approach to Enabling End-to-End QoS for Multimedia Databases. In Proceedings of *International Conference on Extending Database Technology* (*EDBT*) *2004*, pp. 694-711.
40. **Y. Tu**, J. Sun and S. Prabhakar. Performance Analysis of A Hybrid Media Streaming System. In Proceedings of *ACM/SPIE Conference on Multimedia Computing and Networking* (*MMCN*) *2004,* pp. 69-82.
41. W. Aref, A. Catlin, A. Elmagarmid, J. Fan, M. Hammad, I. Ilyas, M. Marzouk, S. Prabhakar, **Y. Tu** and X. Zhu. VDBMS: A Testbed Facility for Research in Video Database Benchmarking. In Proceedings of *International Conference on Distributed Multimedia Systems (DMS) 2003*, pp. 160-166.
42. W. Aref, A. Elmagarmid, J. Fan, J. Guo, M. Hammad, I. Ilyas, M. Marzouk, S. Prabhakar, A. Rezgui, A. Teoh, E. Terzi, **Y. Tu**, A. Vakali, X. Zhu. A Distributed Database Server for Continuous Media. In Proceedings of *International Conference on Data Engineering (ICDE) 2002*, pp. 490-491.