

Journal Papers

- All articles below are international and have been externally refereed.
 - A “[I]” before the publication indicates that the paper is important (i.e., published in top international journals or conferences).
- [J1] [I] **C. Ma***, **R. Cheng**, L. Lakshmanan, and X. Han. *Finding Locally Densest Subgraphs: A Convex-Programming Approach*. Proc. VLDB Endow. 15(2022). Also in the Very Large Databases Conf. (**VLDB 2022**), Sydney, Australia, Sep 2022. (My contribution: 40%: I am involved in problem definition, solution development, and paper writing.)
- [J2] [I] **X. Han***, **R. Cheng**, T. Grubenmann, and **C. Ma***. *DeepTEA: Effective and Efficient Online Time-dependent Trajectory Outlier Detection*. Proc. VLDB Endow. 15(2022). Also in the Very Large Databases Conf. (**VLDB 2022**), Sydney, Australia, Sep 2022. (My contribution: 30%: I am involved in problem definition, solution development, and paper writing.)
- [J3] J. Nasir, Y. H. Kuo, and **R. Cheng**. *Clustering-based iterative heuristic framework for a non-emergency patients transportation problem*. Journal of Transport & Health, volume 26, 2022, 101411, ISSN 2214-1405, <https://doi.org/10.1016/j.jth.2022.101411>. (My contribution: 15%: I am involved in giving advice to the paper.)
- [J4] [I] **C. Ma***, Y. Fang, **R. Cheng**, L. Lakshmanan, W. Zhang, and X. Lin. *On Directed Densest Subgraph Discovery*. **ACM Transactions on Database Systems (TODS)**, December 2021 (Vol. 46, Issue 4, no. 13), pp 1-45. (My contribution: 20%: I am involved in developing solutions and paper writing.)
- [J5] **X. Han***, D. Dell’Aglia, T. Grubenmann, **R. Cheng**, and A. Bernstein. A framework for differentially-private knowledge graph embeddings, **Journal of Web Semantics**, 2021, 100696, ISSN 1570-8268, <https://doi.org/10.1016/j.websem.2021.100696>. (My contribution: 10%: I am involved in giving advice on paper writing and editing.)
- [J6] [I] **X. Li***, **R. Cheng**, K. C.-C. Chang, **C. Shan***, **C. Ma***, and H. Cao. *On Analyzing Graphs with Motif Paths*. Proc. VLDB Endow. 14(6): 1111-1123 (2021). Also in the Very Large Databases Conf. (**VLDB 2021**), Copenhagen, Aug 2021. (My contribution: 30%: I am involved in problem definition, solution development, and paper writing.)
- [J7] [I] **T. N. Chan***, Z. Li, L. H. U, J. Xu, and **R. Cheng**. *Fast Augmentation Algorithms for Network Kernel Density Visualization*. Proc. VLDB Endow. 14(9): 1503-1516 (2021). Also in the Very Large Databases Conf. (**VLDB 2021**), Copenhagen, Aug 2021. (My contribution: 20%: I am involved in problem definition, solution development, and paper writing.)
- [J8] **C. Ma***, Y. Fang, **R. Cheng**, L. Lakshmanan, W. Zhang, and X. Lin. *Efficient Directed Densest Subgraph Discovery*. **Research Highlights Award**, March 2021 (Vol. 50, No. 1), **SIGMOD Record**.
- [J9] W.F. Yang, D. Zheng, **R. Cheng**, J. Pu, and X. Su. *Identifying unmet non-COVID-19 health needs during the COVID-19 outbreak based on social media data: a proof-of-concept study in Wuhan city*. Ann Transl Med. 2021;9(18):1403. doi:10.21037/atm-21-1769. (My contribution: 10%: I am involved in giving advice on paper writing and editing.)
- [J10] [I] **Z. Zhu***, **T. N. Chan***, **R. Cheng**, **L. Do***, **Z. Huang**, and H. Zhang. *Effective and Efficient Discovery of Top-k Meta Paths in Heterogeneous Information Networks*. In the Transactions on Knowledge and Data Engineering (IEEE TKDE) (Early access), Nov 2020, doi: 10.1109/TKDE.2020.3037218. (My contribution: 20%: I am involved in problem definition, solution development, and paper writing.)
- [J11] [I] D. He, S. Wang, X. Zhou, and **R. Cheng**. *GLAD: A Grid and Labelling Framework with Scheduling for Conflict-Aware kNN Queries*. In the Transactions on Knowledge and Data Engineering (IEEE TKDE), 33(4):

1554-1566 (2021). (*My contribution: 20%: I am involved in problem definition, solution development, and paper writing.*)

- [J12] J. Zhou, J. Wu, and **R. Cheng**. *Visualizing Hong Kong's mass transit usage under COVID-19*. **Regional Studies, Regional Science**, 8(1), 2021, pp. 178-183. <https://doi.org/10.1080/21681376.2021.1924849> (*My contribution: 15%: I am involved in providing access to subway passenger data and paper writing.*)
- [J13] V. Yan, **X. Li***, X. Ye, M. Ou, R. Luo, q. Zhang, B. Tang, B. Cowling, I. Hung, C. W. Siu, I. Wong, **R. Cheng**, and E. Chan. *Drug Repurposing for the Treatment of COVID-19: A Knowledge Graph Approach*. Accepted in **Advanced Therapeutics**, 20 May 2021 (early access). <https://doi.org/10.1002/adtp.202100055> (*My contribution: 20%: I am involved in conceptualizing the study and paper writing.*)
- [J14] N. Zhang, W. Jia, P. Wang, C.-H. Dung, P. Zhao, K. Leung, B. Su, **R. Cheng**, and Y. Li. *Changes in local travel behavior before and during the COVID-19 pandemic in Hong Kong*. In **Cities**, May 2021;112:103139. doi: 10.1016/j.cities.2021.103139. Epub 2021 Feb 11. PMID: 33589850; PMCID: PMC7877214. (*My contribution: 15%: I am involved in providing access to subway passenger data and paper writing.*)
- [J15] N. Zhang, W. Jia, H. Lei, P. Wang, P. Zhao, Y. Guo, C.-H. Dung, Z. Bu, P. Xue, J. Xie, Y. Zhang, **R. Cheng**, and Y. Li. *Effects of Human Behavior Changes During the Coronavirus Disease 2019 (COVID-19) Pandemic on Influenza Spread in Hong Kong*. Accepted in **Clinical Infectious Disease**, ciae1818, Oxford Academic, 4 December 2020 (early access). <https://doi.org/10.1093/cid/ciae1818> (*My contribution: 15%: I am involved in providing access to subway passenger data and paper writing.*)
- [J16] S. Amer-Yahia, **R. Cheng**, M. Bouadi, A. Chibah, M. Esfandiari, J. Zhou, N. Zhang, E. Lau, Y. Li, **X. Han***, and **S. Mittal***. *An ML-Powered Human Behavior Management System*. Special Issue on Human Powered AI Systems, **IEEE Data Engineering Bulletin**, Sep 2020, Vol. 43, No. 3, pp. 53-64. (*My contribution: 30%: I am involved in paper writing.*)
- [J17] **[I]** T. N. Chan, L. H. U, **R. Cheng**, M. L. Yiu, and S. Mittal. *Efficient Algorithms for Kernel Aggregation Queries*. Accepted in the Transactions on Knowledge and Data Engineering (**IEEE TKDE**), Aug 2020. (*My contribution: 20%: I am involved in solution design and paper writing.*)
- [J18] **[I]** **C. Ma***, **R. Cheng**, L. Lakshmanan, T. Grubenmann, Y. Fang, and **X. Li**. *LINC: A Motif Counting Algorithm for Uncertain Graphs*. In the Proceedings of the VLDB Endowment (**PVLDB**), Sep 2019. Also in the Very Large Databases Conf. (**VLDB 2020**), Tokyo, Aug 2020. (*My contribution: 30%: I am involved in problem definition, solution development, and paper writing.*)
- [J19] **[I]** **C. Shan***, N. Mamoulis, G. Li, **R. Cheng**, **Z. Huang***, and **Y. Zheng***. *A Crowdsourcing Framework for Collecting Tabular Data*. **IEEE Trans. Knowl. Data Eng.** 32(11): 2060-2074 (2020). (*My contribution: 20%: I am involved in problem definition, solution development, and paper writing.*)
- [J20] Y. Qi, J. Cheng, X. Chen, **R. Cheng**, A. Bifet, and P. Wang. *Discriminative Streaming Network Embedding*. **Knowl. Based Syst.** 190: 105138 (2020). (*My contribution: 15%: I am involved in solution development and paper writing.*)
- [J21] **[I]** Y. Fang, **K. Yu***, **R. Cheng**, L. Lakshmanan, and X. Lin. *Efficient Algorithms for Densest Subgraph Discovery*. In Proceedings of the VLDB Endowment (**PVLDB**), 12(11), pp. 1719-1732, July 2019. Also in the Very Large Databases Conf. (**VLDB 2019**), Los Angeles, Aug 2019. (*My contribution: 30%: I am involved in problem definition, solution development, and paper writing.*)
- [J22] **[I]** **Y. Chen***, Y. Fang, **R. Cheng**, Y. Li, X. Chen, and J. Zhang. *Exploring Communities in Large Profiled Graphs*. In the Transactions on Knowledge and Data Engineering (**IEEE TKDE**), 31(8), pp. 1624-1629, 1 Aug, 2019. (*My contribution: 20%: I am involved in problem definition, solution development, and paper writing.*)
- [J23] **[I]** Y. Fang, X. Huang, L. Qin, Y. Zhang, W. Zhang, **R. Cheng**, and X. Lin. *A survey of community search*

over big graphs. In the Very Large Data Bases Journal (**VLDBJ**), Springer, first online: Jul 2019. (My contribution: 15%: I am involved in giving directions for structuring the survey and giving advice.)

- [J24] [I] **S. Luo***, **R. Cheng**, B. Kao, X. Xiao, S. Zhou, and **J. Hu**. *ROAM: A Fundamental Routing Query on Road Networks with Efficiency*. In the Transactions on Knowledge and Data Engineering (**IEEE TKDE**), vol. 32, no. 8, pp. 1595-1609, 1 Aug. 2020, doi: 10.1109/TKDE.2019.2906188. (My contribution: 30%: I am involved in problem definition, solution development, and paper writing.)
- [J25] Y. Li, Y. Fang, **R. Cheng**, and W. Zhang. *Spatial Pattern Matching: A New Direction for Finding Spatial Objects*. In **SIGSPATIAL Special**, Mar 2019, 11(1): Spatial Query Processing and Traffic Simulation, pp. 3-12. (My contribution: 30%: I am involved in problem definition, solution development, and paper writing.)
- [J26] [I] **Y. Fang***, Z. Wang, **R. Cheng**, H. Wang, and **J. Hu***. *Effective and Efficient Community Search over Large Directed Graphs*. In the Transactions on Knowledge and Data Engineering (**IEEE TKDE**), Early Access, pp. 1-16, ISSN: 1041-4347, 4 Oct 2018. (My contribution: 20%: I am involved in problem definition, solution development, and paper writing.)
- [J27] [I] **Z. Huang***, B. Cautis, **R. Cheng**, and **Y. Zheng***, N. Mamoulis, and **J. Yan**. *Entity-Based Query Recommendation for Long-Tail Queries*. In ACM Transactions on Knowledge Discovery from Data (**TKDD**), 12(6), no. 64, pp. 1-24, Aug 2018. Impact factor: 2.538, cited 3 times. (My contribution: 20%: I am involved in problem definition, solution development, and paper writing.)
- [J28] [I] **S. Luo***, B. Kao, G. Li, **J. Hu***, **R. Cheng**, and **Y. Zheng***. *TOAIN: A Throughput Optimizing Adaptive Index for Answering Dynamic kNN Queries on Road Networks*. In Proceedings of the VLDB Endowment (**PVLDB**), 11(5), pp. 594-606, Jan 2018. Also in the Very Large Databases Conf. (**VLDB 2018**), Rio De Janeiro, Brazil, Aug 27-31, 2018. (My contribution: 15%: I give advice to the problem definition, design and paper presentation.)
- [J29] [I] **Y. Fang***, **Z. Wang***, **R. Cheng**, **X. Li***, **S. Luo***, **J. Hu***, and X. Chen. *On Spatial-Aware Community Search*. In the Transactions on Knowledge and Data Engineering (**IEEE TKDE**), 31(4), pp. 783-798, 8 Jun, 2018. (My contribution: 20%: I am involved in problem definition, solution development, and paper writing.)
- [J30] [I] **Y. Fang***, X. Xie, X. Zhang, **R. Cheng**, and Z. Zhang. *STEM: a suffix tree-based method for web data records extraction*. In Knowledge and Information Systems (**KAIS**), 55(2), pp. 305-331, 2018. (My contribution: 10%: I give comments to the paper.)
- [J31] [I] **Y. Fang***, **R. Cheng**, **S. Luo***, **J. Hu***, **X. Li***. *Effective Community Search over Large Spatial Graphs*. In Proceedings of the VLDB Endowment (**PVLDB**), 10(6), pp. 709-720, Feb 2017, ISSN 2150-8097. Also presented in the Very Large Databases Conf. (**VLDB 2017**), Munich, Germany, Aug 28-Sep 1, 2017. Impact factor: 2.23 (RG), cited 43 times (My contribution: 30%: I am involved in the problem definition, solution design, and paper writing.)
- [J32] [I] **Y. Zheng***, G. Li, Y. Li, **C. Shan***, and **R. Cheng***. *Truth Inference in Crowdsourcing: Is the Problem Solved? [Experiments and Analyses]*. In Proceedings of the VLDB Endowment (**PVLDB**), 10(5), pp. 541-552, Jan 2017, ISSN 2150-8097. Also presented in the Very Large Databases Conf. (**VLDB 2017**), Munich, Germany, Aug 28-Sep 1, 2017. Impact factor: 2.23 (RG), cited 117 times (My contribution: 15%: This is a joint work with Tsinghua University. I am involved in experiment design and paper writing.)
- [J33] [I] **Y. Zheng***, G. Li, and **R. Cheng***. *DOCS: Domain-Aware Crowdsourcing System*. In Proceedings of the VLDB Endowment (**PVLDB**), 10(4), pp. 361-372, Dec 2016, ISSN 2150-8097. Also presented in the Very Large Databases Conf. (**VLDB 2017**), Munich, Germany, Aug 28-Sep 1, 2017. Impact factor: 2.23 (RG), cited 60 times (My contribution: 30%: This is a joint work with Tsinghua University. I am involved in problem definition, solution development, and paper writing.)
- [J34] **Y. Fang***, **R. Cheng**, **S. Luo***, **J. Hu***, and **K. Huang***. *C-Explorer: Browsing Communities in Large Graphs*. In Proceedings of the VLDB Endowment (**PVLDB**), 10(11), pp. 1885-1888, Aug 2017, ISSN 2150-8097. Also

presented in the 43rd Intl. Conf. on Very Large Data Bases (**VLDB**), Munich, Germany, August 2017. (*My contribution: 40%: I am involved in interface design and paper writing.*)

- [J35] **[I] J. Hu***, X. Wu, **R. Cheng**, **S. Luo***, and **Y. Fang***. *On Minimal Steiner Maximum-Connected Subgraphs*. In the Transactions on Knowledge and Data Engineering (**IEEE TKDE**), PP(99), July 2017, ISSN: 1041-4347. (*My contribution: 25%: I am involved in problem definition, solution development, and paper writing.*)
- [J36] **[I] S. Maniu***, **R. Cheng**, and P. Senellart. *An Indexing Framework for Queries on Probabilistic Graphs*. In ACM Transactions on Database Systems (**TODS**), 42(2), article 13, pp. 1-34, June 2017, ISSN: 0362-5915, *impact factor: 1.900, cited 11 times* (*My contribution: 40%: I am involved in problem definition, solution development, and paper writing.*)
- [J37] **[I] C. Ren**, E. Lo, B. Kao, X. Zhu, **R. Cheng**, and D. Cheung. *Efficient Processing of Shortest Path Queries in Evolving Graph Sequences*. In Information Systems (**IS**), Vol 70, Oct 2017, pp. 18-31. (*My contribution: 15%: I am involved in solution development and paper writing.*)
- [J38] **Y. Fang***, X. Xie, X. Zhang, **R. Cheng**, and Z. Zhang. *STEM: a suffix tree-based method for web data records extraction*. In Knowledge and Information Systems (**KAIS**), pp. 1-27, May 2017. (*My contribution: 10%: I am involved in solution development, and paper writing.*)
- [J39] K. A. Schmid, A. Zuefle, T. Emrich, M. Renz, and **R. Cheng**. *Uncertain UV cell computation based on space decomposition. (Extended from [68], one of the best papers from SSTD for consideration in Geoinformatica)* In **GeoInformatica**, Springer, ISSN 1573-7624, pp. 1-31, Feb 2017. (*My contribution: 20%: I am involved in problem definition, solution development, and paper writing.*)
- [J40] **[I] Z. He**, P. Wong, B. Kao, E. Lo, **R. Cheng**, and Z. Feng. *Efficient Pattern-Based Aggregation on Sequence Data*. In the Transactions on Knowledge and Data Engineering (**IEEE TKDE**), ISSN: 1041-4347, 29(2), pp. 286-299, Feb 2017. (*My contribution: 10%: I give advice to the paper.*)
- [J41] **[I] Y. Fang***, **R. Cheng**, **S. Luo***, and **J. Hu***. *Effective Community Search for Large Attributed Graphs*. In Proceedings of the VLDB Endowment (**PVLDB**), 9(12), pp. 1233-1244, Aug 2016. Also presented in the Very Large Databases Conf. (**VLDB 2016**), New Delhi, India, Sep 5-9, 2016. *Impact factor: 2.23 (RG), cited 64 times* (*My contribution: 40%: I am involved in problem definition, solution development, and paper writing.*)
- [J42] **[I] Z. Li**, **Y. Fang***, Q. Liu, J. Cheng, **R. Cheng**, and J. C.S. Lui. *Walking in the Cloud: Parallel SimRank at Scale*. In the Proceedings of the VLDB Endowment (**PVLDB**), 9(1), ISSN 2150-8097. Also presented in the Very Large Databases Conf. (**VLDB 2016**), New Delhi, India, Sep 5-9, 2016. *Impact factor: 2.23 (RG), cited 26 times* (*My contribution: 20%; this is a joint work with Huawei Noah's Ark Lab Hong Kong, where my student Yixiang Fang did this work during his internship in Huawei. I am involved in the solution design and paper writing.*)
- [J43] C. Dai, S. Nutanong, C.Y. Chow, and **R. Cheng**. *Entropy-based Scheduling Policy for Cross Aggregate Ranking Workloads*. In the IEEE Transactions on Services Computing (**IEEE TSC**), ISSN: 1939-1374, June 2016. (*My contribution: 15%: This is a joint work with City University of Hong Kong. I participated in discussions and edited the paper.*)
- [J44] **[I] Y. Fang***, **R. Cheng**, W. Tang, **S. Maniu***, and **X. Yang***. *Scalable Algorithms for Nearest-Neighbor Joins on Big Trajectory Data*. In the Transactions on Knowledge and Data Engineering (**IEEE TKDE**), pp. 785-800, ISSN: 1041-4347, 28(3), March 2016. *Impact factor: 3.857, cited 30 times* (*My contribution: 40%: I am involved in the solution design and paper writing.*)
- [J45] Z. Wang, B. Yao, **R. Cheng**, X. Gao, L. Zou, H. Guan, and M. Guo. *SMe: Explicit and Implicit Constrained-Space Probabilistic Threshold Range Queries for Moving Objects*. July 2015, ISSN 1384-6175, **GeoInformatica**. (*My contribution: 15%: This is a joint work with Shanghai Jiaotong University. I am responsible for giving high-level ideas and editing the paper.*)

- [J46] [I] **C. J. Zhu***, K. Y. Lam, **R. Cheng**, and C. K. Poon. ^[11]_[SEP] *On Using Broadcast Index for Efficient Execution of Shortest Path Continuous Queries*. In Information Systems (**IS**), Volume 49, April 2015, pp. 142-162. (My contribution: 20%: This is a joint work with City University of Hong Kong. I am responsible for giving high-level ideas and editing the paper.)
- [J47] [I] **Y. Tang***, L. H. U, Y. Cai, N. Mamoulis, and **R. Cheng**. ^[11]_[SEP] *Earth Mover's Distance based Similarity Search at Scale*. In Proceedings of the VLDB Endowment (**PVLDB**), 7(4), pp. 313-324, ISSN 2150-8097. Also presented in the Very Large Databases Conf. (**VLDB 2014**), Hangzhou, China, Sep 1-5, 2014. Acceptance rate: 20%, Impact factor: 2.23 (RG), cited 29 times. (My contribution: 15%: I give advice to the paper.)
- [J48] [I] **X. Xie***, M. L. Yiu, **R. Cheng**, and L. Hua. *Scalable Evaluation of Trajectory Queries over Imprecise Location Data*. In the Transactions on Knowledge and Data Engineering (**TKDE**), pp. 2029-2044, ISSN: 1041-4347, August 2014. (My contribution: 30%: I am involved in the design of the solution and write-up of the paper.)
- [J49] [I] **X. Xie***, **R. Cheng**, M. L. Yiu, **L. Sun***, and **J. Chen***. *UV-Diagram: A Voronoi Diagram for Uncertain Spatial Databases*. In the Very Large Databases Journal (**VLDBJ**), 22(3), pp. 319-344, June 2013. Impact factor: 1.973; cited 18 times (My contribution: 40%: I am involved in the design of the solution, experiment design, and writing of the paper.)
- [J50] [I] **Y. Zhang*** and **R. Cheng**. *Probabilistic Filters: A Stream Protocol for Continuous Probabilistic Queries*. In Information Systems (**IS**), 38(1), pp. 132-154, March 2013. (My contribution: 50%: I am involved in the design of the solution, experiment design, and writing of the paper.)
- [J51] [I] L. Wang, D. W. Cheung, **R. Cheng**, S. D. Lee, and **X. Yang***. *Efficient Mining of Frequent Itemsets on Large Uncertain Databases*. In the IEEE Transactions on Knowledge and Data Engineering (**IEEE TKDE**), 24(12), pp. 2170-2183, Dec 2012. Impact factor: 3.857; cited 88 times. (My contribution: 30%: I am involved in the design of the solution, experiment design, and writing of the paper.)
- [J52] [I] T. Bernecker, **R. Cheng**, D. Cheung, H. Kriegel, S. D. Lee, M. Renz, F. Verhein, L. Wang, and A. Zuefle. *Model-based Probabilistic Frequent Itemset Mining*. In the Knowledge and Information Systems Journal (**KAIS**), October 2013, Volume 37, Issue 1, pp 181-217, Springer. Impact factor: 2.397, cited 20 times. (Selected among **the best papers** in CIKM'10 conference in [C52] for journal extension.) (My contribution: 30%: I am involved in the design of the solution, experiment design, and writing of the paper.)
- [J53] [I] **J. Gong***, **R. Cheng**, and D. W. Cheung. *Efficient Management of Uncertainty in XML Schema Matching*. In the Very Large Databases Journal (**VLDBJ**), 21(3), pp. 385-409, Jun 2012. Impact factor: 1.973; cited 17 times. (My contribution: 40%: I am involved in the design of the solution, experiment design, and writing of the paper.)
- [J54] [I] **L. Sun***, **R. Cheng**, **X. Li***, D. Cheung, and J. Han. *On Link-based Similarity Join*. In Proceedings of the VLDB Endowment (**PVLDB**), 4(11), pp. 714-725, ISSN 2150-8097. Also presented in the Very Large Databases Conf. (**VLDB 2011**), Seattle, Aug, 2011. Acceptance rate: 18.1% (100 out of 553 papers); Impact factor: 2.23 (RG), cited 31 times. (My contribution: 30%: I am involved in the problem definition, solution and experiment design, and writing of the paper.)
- [J55] [I] C. Ren, E. Lo, B. Kao, X. Zhu, and **R. Cheng**. *On Querying Historical Evolving Graph Sequences*. In Proceedings of the VLDB Endowment (**PVLDB**), 4(11), pp. 726-737, ISSN 2150-8097. Also presented in the Very Large Databases Conf. (**VLDB 2011**), Seattle, Aug, 2011. Acceptance rate: 18.1% (100 out of 553 papers). (My contribution: 20%: I am involved in the high-level design of the solution and writing of the paper.)
- [J56] [I] W. K. Ngai, B. Kao, **R. Cheng**, M. Chau, S. D. Lee, D. W. Cheung, and K. Y. Yip. *Metric and Trigonometric Pruning for Clustering of Uncertain Data in 2D Geometric Space*. In Information Systems (**IS**), 36(2), pp. 476-497, 2011. (My contribution: 20%: I am involved in the design of the solution, experiment design, and writing of the paper.)

- [J57] [I] T. Farrell, K. Rothermel, and **R. Cheng**. *Processing Continuous Range Queries with Spatio-Temporal Tolerance*. In IEEE Transactions on Mobile Computing (**IEEE TMC**), 10(3), pp. 320-334, Mar 2011. *Impact factor: 4.474; cited 20 times. (My contribution: 30%: I am involved in the design of the solution, experiment design, and writing of the paper.)*
- [J58] [I] **R. Cheng**, E. Lo, **X. Yang***, M. Luk, **X. Li***, and **X. Xie***. *Explore or Exploit? Effective Strategies for Disambiguating Large Databases*. In Very Large Databases Conf. (**VLDB 2010**), Singapore, Sep, 2010; also appeared in Volume 3 of the Journal "Proceedings of the VLDB Endowment". (*PVLDB*), ISSN 2150-8097. *Acceptance rate: 18.4% (48 out of 261 papers) (My contribution: 60%: I am the first author, involved in the problem definition, solution design, and writing of the paper.)*
- [J59] [I] **R. Cheng**, B. Kao, A. Kwan, S. Prabhakar and Y. Tu. *Filtering Data Streams for Entity-based Continuous Queries*. In IEEE Transactions on Knowledge and Data Engineering (**IEEE TKDE**), Vol. 22, No. 2, pp. 234-248, Feb 2010. *Impact factor: 3.857; cited 15 times. (My contribution: 60%: I am involved in the design of the solution, experiment design, and writing of the paper.)*
- [J60] [I] **J. Chen***, **R. Cheng**, M. Mokbel, and C. Chow. *Scalable Processing of Snapshot and Continuous Nearest-Neighbor Queries over One-Dimensional Uncertain Data*. In Very Large Databases Journal (**VLDBJ**), Special Issue on Uncertain and Probabilistic Databases, Vol. 18, No. 5, pp. 1219-1240, Oct 2009. *Impact factor: 1.973; cited 28 times (Awarded the **Research Output Prize** in Department of Computer Science, Faculty of Engineering, HKU, 2010) (My contribution: 50%: I am involved in the design of the solution, experiment design, and writing of the paper.)*
- [J61] D. Lin, E. Bertino, **R. Cheng**, and S. Prabhakar. *Location Privacy in Moving-Object Environments*. In Transactions on Data Privacy: Foundations and Technologies (**TDP**), 2(1): 21-46 (April 2009). URL: <http://www.tdp.cat>. *(My contribution: 20%: I am involved in the design of the solution, experiment design, and writing of the paper.)*
- [J62] [I] **R. Cheng**, **J. Chen***, and **X. Xie***. *Cleaning Uncertain Data with Quality Guarantees*. In Very Large Databases Conf. (**VLDB 2008**), New Zealand, Aug 2008. *Acceptance rate: 16.8% (46 out of 273 papers). Also appeared in Volume 1 of the Journal "Proceedings of the VLDB Endowment" (PVLDB), ISSN 2150-8097, Impact factor: 2.23 (RG), cited 91 times (My contribution: 50%: I am involved in the problem definition, solution, experiment design, and writing of the paper.)*
- [J63] Y. Xia, **R. Cheng**, S. Prabhakar, S. Lei, and R. Shah. *Indexing Continuously Changing Data with Mean-Variance Tree*. In the Intl. Journal of High Performance Computing and Networking (**IJHPCN**): A Special Issue on Recent Advances in Collaborative Internet Computing, Vol. 5, No. 4, pp. 263-272, Inderscience Publishers, 27 Dec 2008. *(My contribution: 30%: I am involved in the design of the solution, experiment design, and writing of the paper.)*
- [J64] [I] Y. Tao, X. Xiao, and **R. Cheng**. *Range Search on Multidimensional Uncertain Data*. In ACM Transactions on Database Systems (**TODS**). 32(3):15, Aug 2007. *Impact factor: 1.900; cited 176 times. (My contribution: 30%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [J65] [I] **R. Cheng**, K.Y. Lam, S. Prabhakar, and B. Liang. *An Efficient Location Update Mechanism for Continuous Queries over Moving Objects*. In Information Systems (**IS**), Vol. 32, No. 4, pp. 593-620, Jun 2007. URL: <http://dx.doi.org/10.1016/j.is.2006.03.002>. *Impact factor: 2.066; cited 22 times. (My contribution: 40%: I am the corresponding author, and am involved in solution design and writing of the paper.)*
- [J66] [I] **R. Cheng**, D. Kalashnikov, and S. Prabhakar. *Evaluation of Probabilistic Queries over Imprecise Data in Constantly-Evolving Environments*. In Information Systems (**IS**), Vol. 32, No. 1, pp. 104-130, Mar 2007. URL: <http://dx.doi.org/10.1016/j.is.2005.06.002>. *Impact factor: 2.066; cited 45 times. (My contribution: 70%: I am involved in the design of the solution, experiment design and implementation, and writing of the paper.)*

- [J67] S. Han, E. Chan, **R. Cheng**, and K. Y. Lam. *A Statistics-Based Sensor Selection Scheme for Continuous Probabilistic Queries in Sensor Network*. In Real Time Systems Journal (**RTS**), Vol. 35, No. 1, pp. 33-58, Jan 2007. URL: <http://www.springerlink.com/content/4635361u56167401> (My contribution: 30%: I am involved in the design of the solution, experiment design, and writing of the paper.)
- [J68] **[I] R. Cheng**, D. Kalashnikov, and S. Prabhakar. *Querying Imprecise Data in Moving Object Environments*. In IEEE Transactions on Knowledge and Data Engineering (**IEEE TKDE**), Vol. 16, No. 9, pp. 1112-1127, Sep 2004. *Impact factor: 3.857; cited 579 times.* (My contribution: 70%: I am involved in the design of the solution, experiment design and implementation, and writing of the paper.)
- [J69] **[I] R. Cheng** and S. Prabhakar. *Managing Uncertainty in Sensor Databases*. In Special Section on Sensor Network Technology and Sensor Data Management, **SIGMOD Record**, Vol.32, No.4, pp.41-46, Dec 2003. *Impact factor: 1.366; cited 93 times.* (My contribution: 60%: I am the corresponding author, and involved in solution development and writing of the paper.)
- [J70] **[I] B. Kao**, K. Y. Lam, B. Adelberg, **R. Cheng**, and T. Lee. *Maintaining Temporal Consistency of Discrete Objects in Soft Real-Time Database Systems*. In IEEE Transactions on Computers (**IEEE TC**), Vol. 52, No. 3, pp. 373-389, 2003. *Impact factor: 3.131; cited 40 times.* (My contribution: 30%: I am involved in the design of the solution, experiment design and implementation, and writing of the paper.)
- [J71] **[I] K. Y. Lam**, T. W. Kuo, B. Kao, T. Lee, and **R. Cheng**. *Evaluation of Concurrency Control Strategies for Mixed Soft Real-Time Database Systems*. In Information Systems Journal (**IS**), Vol. 27, No. 2, pp. 123-149, Elsevier Science, 2002. *Impact factor: 2.066; cited 47 times.* (My contribution: 30%: I am responsible for experiment design and implementation, and writing of the paper.)

Conference and Workshop Papers

* All articles below are international and have been externally refereed.

- [C1] **[I] C. Ma***, Y. Fang, **R. Cheng**, L. Lakshmanan, and X. Han. *A Convex-Programming Approach for Efficient Directed Densest Subgraph Discovery*. ACM **SIGMOD** Conference 2022, June 2022, Philadelphia, PA, USA.
- [C2] **[I] X. Lin***, **R. Cheng**, T. Grubenmann, S. Maniu, and **C. Ma***. *Leveraging Contextual Graphs for Stochastic Weight Completion in Sparse Road Networks*. In SIAM International Conference on Data Mining (**SDM 2022**), April 2022, Alexandria, Virginia, US. (My contribution: 20%: I am involved in designing the solutions and writing the paper.)
- [C3] T. N. Chan, P. L. Ip, L. H. U, W. H. Tong, S. Mittal, Y. Li, and **R. Cheng***. *KDV-Explorer: A Near Real-Time Kernel Density Visualization System for Spatial Analysis (demo paper)*. In the Very Large Databases Conf. (**VLDB 2021**), Copenhagen, Aug 2021. (My contribution: 20%: I am involved in designing the demo and co-authoring the demo proposal.)
- [C4] X. Chen, H. Song, J. Jiang, C. Ruan, C. Li, S. Wang, G. Zhang, **R. Cheng***, H. Cui. *Achieving Low Tail-latency and High Scalability for Serializable Transactions in Edge Computing*. **EuroSys 2021**: 210-227.
- [C5] **[I] C. Ma***, Y. Fang, **R. Cheng**, L. Lakshmanan, W. Zhang, and X. Lin. *Efficient Algorithms for Densest Subgraph Discovery on Large Directed Graphs*. ACM **SIGMOD** Conference 2020, June 2020, Portland, US, pp. 1051-1066. (My contribution: 30%: I am responsible for problem definition, solution development, and writing of the paper.)
- [C6] **X. Li***, **R. Cheng**, **M. Najafi***, K. Chang, **X. Han**, and H. Cao. *M-Cypher: A GQL Framework Supporting Motifs, demonstrated by Covid-19 Knowledge Graph Analysis*. In the 29th ACM Intl. Conf. on Information and

Knowledge Management (ACM CIKM 2020), October 2020, Ireland (virtual). (My contribution: 30%: I am responsible for problem definition, system design, and writing of the paper.)

- [C7] **C. Shan***, L. H. U., N. Mamoulis, and **R. Cheng**. *A Toolkit for Managing Multiple Crowdsourced Top-k Queries*. In the 29th ACM Intl. Conf. on Information and Knowledge Management (ACM CIKM 2020), online. (My contribution: 20%: I am responsible for system design and writing of the paper.)
- [C8] **[I] T. N. Chan***, **R. Cheng**, and M. L. Yiu. *QUAD: Quadratic-Bound-based Kernel Density Visualization*. In the ACM SIGMOD Conf. (**SIGMOD 2020**), Portland, OR, USA, Jun 2020. (My contribution: 30%: I am responsible for problem definition, solution development, and writing of the paper.)
- [C9] **[I] J. Yan***, O. Schulte, M. Zhang, J. Wang, and **R. Cheng**. *SCODED: Statistical Constraint Oriented Data Error Detection*. In the ACM SIGMOD Conf. (**SIGMOD 2020**), Portland, OR, USA, Jun 2020. (My contribution: 20%: I am responsible for solution development and writing of the paper.)
- [C10] **[I] C. Ma***, Y. Fang, **R. Cheng**, L. Lakshmanan, W. Zhang, and X. Lin. *Efficient Algorithms for Densest Subgraph Discovery on Large Directed Graphs*. In the ACM SIGMOD Conf. (**SIGMOD 2020**), Portland, OR, USA, Jun 2020. (My contribution: 30%: I am responsible for solution development and writing of the paper.)
- [C11] **C. Shan***, L. H. U, N. Mamoulis, **R. Cheng**, and X. Li. *A General Early-Stopping Module for Crowdsourced Ranking*. In the 25th Intl. Conf. on Database Systems for Advanced Applications (**DASFAA**), Jeju, South Korea, May 2020. (My contribution: 20%: I helped in solution development and writing of the paper.)
- [C12] **[I] C. Shan***, N. Mamoulis, **R. Cheng**, G. Li, X. Li, and Y. Qian. *An End-to-End Deep RL Framework for Task Arrangement in Crowdsourcing Platforms*. In the 36th IEEE Intl. Conf. on Data Engineering (**IEEE ICDE 2020**), Dallas, Texas, Apr 2020. (My contribution: 25%: I am responsible for solution development, and writing of the paper.)
- [C13] **X. Han***, **T. Grubenmann**, **R. Cheng**, S. C. Wong, **X. Li***, and **W. Sun***. *Traffic Incident Detection: A Trajectory-based Approach (Short paper)*. In the 36th IEEE Intl. Conf. on Data Engineering (**IEEE ICDE 2020**), Dallas, Texas, Apr 2020, pp. 1866-1869. (My contribution: 30%: I am responsible for solution development, and writing of the paper.)
- [C14] **B. Li***, **R. Cheng**, J. Hu, Y. Fang, M. Ou, R. Luo, K. Chang, and X. Lin. *MC-Explorer: Analyzing and Visualizing Motif-Cliques on Large Networks (Demo paper.)* In the 36th IEEE Intl. Conf. on Data Engineering (**IEEE ICDE 2020**), Dallas, Texas, Apr 2020. (My contribution: 30%: I am responsible for demo design and development, and writing of the paper.)
- [C15] **[I] T. Grubenmann***, **R. Cheng**, and L. Lakshmanan. *TSA: A Truthful Mechanism for Social Advertising*. In the Web Search and Data Mining Conference (WSDM 2020), Houston, Texas, USA, Feb 2020. (My contribution: 30%: I am responsible for problem definition, solution development, and writing of the paper.)
- [C16] T.-H. Wu, B. Kao, A. Cheung, M. Cheung, C. Wang, Y. Chen, G. Yuan, and **R. Cheng**. *Integrating Domain Knowledge in AI-Assisted Criminal Sentencing of Drug Trafficking Cases*. JURIX 2020: 174-183. (My contribution: 10%: I am responsible for writing of the paper.)
- [C17] Y. Fang, X. Huang, L. Qin, Y. Zheng, W. Zhang, **R. Cheng**, and X. Lin. *A Survey of Community Search Over Big Graphs (Poster)*. In the Very Large Databases Conf. (**VLDB 2019**), Los Angeles, Aug 2019. (My contribution: 10%: I give advice to the organization of the paper.)
- [C18] W. Y. Szeto, R. Wong, **R. Cheng**, and W. Sun. *An artificial bee colony algorithm for optimizing ready-mixed concrete dispatching operation*. In 14th Intl. Congress on Logistics and Supply Chain Management Systems (**ICLS 2019**), Taipei, Aug 2019. (My contribution: 20%: I am responsible for solution development and writing of the paper.)

- [C19] J. Nasir, Y. H. Kuo, and **R. Cheng**. *Optimizing operators' and users' objectives in non-emergency patients transportation*. In 4th Intl. Conf. on Health Care Systems Engineering (**HCSE 2019**), Montreal, Canada, May 2019. (My contribution: 30%: I am responsible for solution and writing of the paper.)
- [C20] **Y. Fang***, Z. Wang, **R. Cheng**, H. Wang, and **J. Hu***. *Effective and Efficient Community Search over Large Directed Graphs* (Extended Abstract). In the 35th IEEE Intl. Conf. on Data Engineering (**TKDE poster, IEEE ICDE 2019**), Macau SAR, China, Apr 2019. (My contribution: 30%: I am responsible for experiment design and implementation, and writing of the paper.)
- [C21] **Y. Chen***, **Y. Fang***, **R. Cheng**, Y. Li, X. Chen, and J. Zhang. *Exploring Communities in Large Profiled Graphs* (Extended Abstract). In the 35th IEEE Intl. Conf. on Data Engineering (**TKDE poster, IEEE ICDE 2019**), Macau SAR, China, Apr 2019. (My contribution: 30%: I am responsible for experiment design and implementation, and writing of the paper.)
- [C22] A. Zhou, Y. Xiao, B. He, S. Ibrahim, and **R. Cheng**. *Incorporating Probabilistic Optimizations for Resource Provisioning of Data Processing Workflows*. In Proc. 48th Intl. Conf. on Parallel Processing, (**ICPP**), Aug 2019: 6:10-6:10. (My contribution: 10%: I give advice to the paper.)
- [C23] **[I] J. Hu***, **R. Cheng**, K. C. C. Chang, A. Sankar, **Y. Fang***, and B. Y. H. Lam. *Discovering Motif Cliques in Large Heterogeneous Information Networks*. In the 35th IEEE Intl. Conf. on Data Engineering (**IEEE ICDE 2019**), Macau SAR, China, Apr 2019. (My contribution: 30%: I am responsible for experiment design and implementation, and writing of the paper.)
- [C24] **[I] S. Luo***, B. Kao, X. Wu, and **R. Cheng**. *MPR – A partitioning-republication framework for multi-processing kNN Search on Road Networks*. In the 35th IEEE Intl. Conf. on Data Engineering (**IEEE ICDE 2019**), Macau SAR, China, Apr 2019. (My contribution: 15%: I am responsible for experiment design and implementation, and writing of the paper.)
- [C25] **[I] D. He**, S. Wang, X. Zhou, and **R. Cheng**. *An Efficient Framework for Correctness-Aware kNN Queries on Road Networks*. In the 35th IEEE Intl. Conf. on Data Engineering (**IEEE ICDE 2019**), Macau SAR, China, Apr 2019. (My contribution: 15%: I am responsible for experiment design and implementation, and writing of the paper.)
- [C26] **Y. Fang***, Z. Wang, **R. Cheng**, H. Wang, and **J. Hu***. *Effective and Efficient Community Search over Large Directed Graphs* (Extended Abstract). In the 35th IEEE Intl. Conf. on Data Engineering (**TKDE poster, IEEE ICDE 2019**), Macau SAR, China, Apr 2019. (My contribution: 15%: I am responsible for experiment design and implementation, and writing of the paper.)
- [C27] **Y. Chen***, **Y. Fang***, **R. Cheng**, Y. Li, X. Chen, and J. Zhang. *Exploring Communities in Large Profiled Graphs* (Extended Abstract). In the 35th IEEE Intl. Conf. on Data Engineering (**TKDE poster, IEEE ICDE 2019**), Macau SAR, China, Apr 2019.
- [C28] **[I] Z. Zhu***, **R. Cheng**, **L. Do***, **Z. Huang***, and **H. Zhang**. *Evaluating Top-k Meta Path Queries on Large Heterogeneous Information Networks*. In the IEEE Intl. Conf. on Data Mining (**IEEE ICDM 2018**), Singapore, Nov, 2018, pp. 1470-1475. Acceptance rate: 20%. (My contribution: 15%: I am responsible for experiment design and implementation, and writing of the paper.)
- [C29] **H. Sun***, **R. Cheng**, **X. Xiao**, **J. Yan***, **Y. Zhen***, and **Y. Qian**. *Maximizing Social Influence for the Awareness Threshold Model*. In the Database Systems for Advanced Applications – 23rd Intl. Conf (DASFAA), pp, 491-510, May 2018.
- [C30] **[I] Y. Fang***, **R. Cheng**, G. Cong, N. Mamoulis, and Y. Li. *On Spatial Pattern Matching*. In the 34th IEEE Intl. Conf. on Data Engineering (**IEEE ICDE 2018**), Paris, France, Apr 2018. (My contribution: 30%: I am responsible for experiment design and implementation, and writing of the paper.)

- [C31] **Y. Fang***, **R. Cheng**, **J. Wang***, **Budiman***, G. Cong, and N. Mamoulis. *SpaceKey: Exploring Patterns in Spatial Databases (Demo)*. In the 34th IEEE Intl. Conf. on Data Engineering (**IEEE ICDE 2018**), Paris, France, Apr 2018. (My contribution: 30%: I am responsible for experiment design and implementation, and writing of the paper.)
- [C32] **[I] C. Shan***, N. Mamoulis, G. Li, **R. Cheng**, **Z. Huang***, and **Y. Zheng***. *T-Crowd: Effective Crowdsourcing for Tabula Data*. In the 34th IEEE Intl. Conf. on Data Engineering (**IEEE ICDE 2018**), Paris, France, Apr 2018. (My contribution: 15%: I am responsible for experiment design and implementation, and writing of the paper.)
- [C33] **[I] X. Li***, **R. Cheng**, **Y. Fang***, **J. Hu***, and S. Maniu. *Scalable Evaluation of k-NN Queries on Large Uncertain Graphs*. In the 21st Intl. Conf. on Extending Database Technology (**EDBT 2018**), Vienna, Austria, Mar 2018. (My contribution: 40%: I am responsible for experiment design and implementation, and writing of the paper.)
- [C34] **[I] J. Hu***, **R. Cheng**, **Z. Huang***, **Y. Fang***, and **S. Luo***. *On Embedding Uncertain Graphs*. In the 26th ACM Conf. on Information and Knowledge Management (**ACM CIKM 2017**), Singapore, Nov 6 – Nov 10, 2017. Acceptance rate: 21% (171/820). (My contribution: 40%: I am involved in problem definition, solution development, and paper writing.)
- [C35] **[I] S. Luo***, **J. Hu***, **R. Cheng**, and B. Kao. *SEQ: Example-based Query for Spatial Objects*. (Short Paper). In the 26th ACM Conf. on Information and Knowledge Management (**ACM CIKM 2017**), Singapore, Nov 6 – Nov 10, 2017. Acceptance rate: 30% (119/398). (My contribution: 30%: I am involved in problem definition, solution development, and paper writing.)
- [C36] **Y. Xu***, **R. Cheng**, and **Y. Zheng***. *Reliable Retrieval of Top-k Tags*. In the 18th Intl. Conf. on Web Information Systems Engineering (**WISE**), Moscow, Russia, October 2017. Acceptance rate: 25% (49/196). (My contribution: 40%: I am involved in problem definition, solution development, and paper writing.)
- [C37] **[I] J. Hu***, X. Wu, **R. Cheng**, **S. Luo***, and **Y. Fang***. *Querying Minimal Steiner Maximum-Connected Subgraphs in Large Graphs*. In **CIKM 2016**, pp. 1241-1250, Indianapolis, October 2016. (My contribution: 30%: I am involved in problem definition, solution development, and paper writing.)
- [C38] **[I] Z. Huang***, B. Cautis, **R. Cheng**, and **Y. Zheng***. *KB-Enabled Query Recommendation for Long-Tail Queries*. In **CIKM 2016**, Indianapolis, October 2016, pp. 2107-2112. (My contribution: 30%: I am involved in problem definition, solution development, and paper writing.)
- [C39] **[I] Z. Huang***, **Y. Zheng***, **R. Cheng**, Y. Sun, N. Mamoulis, and X. Li. *Meta Structure: Computing Relevance in Large Heterogeneous Information Networks*. In the 22nd ACM SIGKDD Intl. Conf. on Knowledge Discovery and Data Mining (**KDD 2016**), San Francisco, US, August 2016, cited 63 times (My contribution: 30%: I am involved in problem definition, solution development, and paper writing.)
- [C40] **[I] H. Hu**, **Y. Zheng***, Z. Bao, G. Li, J. Feng, and **R. Cheng**. *Crowdsourced POI Labelling: Location-Aware Result Inference and Task Assignment*. In Intl. Conf. on Data Engineering (**IEEE ICDE 2016**), Helsinki, Finland, May 2016, pp. 61-72 (My contribution: 15%: This is a collaboration with Tsinghua University. I am involved in problem definition, solution development, and paper writing.)
- [C41] **Y. Fang***, **R. Cheng**, W. Tang, **S. Maniu***, and **X. Yang***. *Scalable Algorithms for Nearest-Neighbor Joins on Big Trajectory Data*. In Intl. Conf. on Data Engineering (**IEEE ICDE 2016**), *TKDE Extended Abstract*, Helsinki, Finland, May 2016. (My contribution: 40%: I am involved in problem definition, solution development, and paper writing.)
- [C42] Y. Sun, **H. Sun***, and **R. Cheng**. *Fast and Semantic Measurements on Collaborative Tagging Quality*. In the Advances in Knowledge Discovery and Data Mining – 20th Pacific-Asia Conference (**PAKDD 2016**), New Zealand, April 2016, pp. 363-375. (My contribution: 20%: I am involved in problem definition, solution development, and paper writing.)

- [C43] Z. Li, **Y. Fang***, Q. Liu, J. Cheng, **R. Cheng**, and J. C.S. Lui. *PASCO: Parallel SimRank Computation at Scale (Poster)*. In the ACM Symposium on Cloud Computing (**SoCC 2015**), Hawaii, August 27-29, 2015. (My contribution: 20%; this is a joint work with Huawei Noah's Ark Lab Hong Kong, where my student Yixiang Fang did this work during his internship in Huawei. I am involved in the solution design and paper writing.)
- [C44] **[I] S. Lei***, **S. Maniu***, **L. Mo***, **R. Cheng**, and P. Senellart. *Online Influence Maximization*. In the 21th ACM SIGKDD Intl. Conf. on Knowledge Discovery and Data Mining (**KDD 2015**), Sydney, Australia, August 2015. Acceptance rate: 19.4% (159 out of 819 papers), cited 79 times (My contribution: 30%; I am involved in the design of the solution, experiment design and implementation, and writing of the paper.)
- [C45] **J. Hu***, **R. Cheng**, D. Wu, and B. Jin. *Efficient Top-k Subscription Matching for Location-Aware Publish/Subscribe*. In the 14th Intl. Symposium on Spatial and Temporal Databases (**SSTD 2015**), Seoul, South Korea, August 2015. Acceptance rate: 37.5% (24 out of 64 papers)(My contribution: 30%; I am involved in the solution design and paper writing.)
- [C46] T. Emrich, K. A. Schmid, A. Zuefle, M. Renz, and **R. Cheng**. *Uncertain Voronoi Cell Computation based on Space Decomposition*. In the 14th Intl. Symposium on Spatial and Temporal Databases (**SSTD 2015**), Seoul, South Korea, August 2015. (One of the selected best papers to be extended to be published in [32].) Acceptance rate: 37.5% (24 out of 64 papers) (My contribution: 20%; this is a joint work with University of Munich. I am involved in the solution design and paper writing.)
- [C47] **[I] Y. Zheng***, J. Wang, G. Li, **R. Cheng**, and J. Feng. *QASCA: A Quality-Aware Task Assignment System for Crowdsourcing Applications*. In ACM SIGMOD Intl. Conf. on Management of Data (**SIGMOD 2015**), Melbourne, Victoria, Australia, May 2015. Acceptance rate: 25.2% (106 out of 415 papers), cited 124 times. (My contribution: 20%; this is a joint work with Tsinghua University, where my student Yudian Zheng did this work during his internship in Tsinghua. I am involved in the solution design and paper writing.)
- [C48] **[I] C. Meng***, **R. Cheng**, **S. Maniu***, P. Senellart, and **W. Zhang***. *Discovering Meta-Paths in Large Heterogeneous Information Networks*. In the 24th Intl. World Wide Web Conf. (**WWW 2015**), Florence, Italy, May 2015. Acceptance rate: 14.1% (131 out of 929 papers), cited 61 times. (My contribution: 25%; I am involved in the problem definition, solution design, and writing of the paper.)
- [C49] **[I] Y. Zheng***, **R. Cheng**, **L. Mo***, and **S. Maniu***. *On Optimality of Jury Selection in Crowdsourcing*. In the 18th Intl. Conf. on Extending Database Technology (**EDBT 2015**), Brussels, Belgium, Mar 2015. Acceptance rate: 25.5% (47 out of 184 papers)(My contribution: 30%; I am involved in the problem definition, solution design, and writing of the paper.)
- [C50] **S. Maniu***, **R. Cheng**, and P. Senellart. *ProbTree: A Query-Efficient Representation of Probabilistic Graphs*. In the 1st Intl. Workshop on Big Uncertain Data (**BUDA**), associated with **SIGMOD**, Utah, US, Jun 2014. (My contribution: 30%; I am involved in the problem definition, solution design, and writing of the paper.)
- [C51] **[I] W. Zhang***, **R. Cheng**, and B. Kao. *Evaluating Multi-way Joins over Discounted Hitting Time*. In Intl. Conf. on Data Engineering (**IEEE ICDE 2014**), Chicago, US, Apr 2014. Acceptance rate: 20.0% (89 out of 446 papers). (My contribution: 40%; I am involved in the problem definition, solution design, and writing of the paper.)
- [C52] **S. Lei***, **X. Yang***, **L. Mo***, **S. Maniu***, and **R. Cheng**. *iTag: Incentive-Based Tagging*. Demo paper, in Intl. Conf. on Data Engineering (**IEEE ICDE 2014**), Chicago, US, Apr 2014 (My contribution: 20%; I am involved in solution design, and writing of the paper.)
- [C53] **[I] C. Ren**, **L. Mo***, B. Kao, **R. Cheng**, and **D. Cheung**. *CLUDE: An Efficient Algorithm for LU Decomposition over a Sequence of Evolving Graphs*. In the 17th Intl. Conf. on Extending Database Technology (**EDBT 2014**), Athens, Greece, Mar 2014. Acceptance rate: 20%. (My contribution: 20%; I am involved in the problem definition, solution design, and writing of the paper.)

- [C54] Y. Sun, H. Xu, and **R. Cheng**. *Privacy Preserving Path Recommendation for Moving User on Location Based Service*. In the 10th IEEE Intl. Conference on Ubiquitous Intelligence and Computing (**UIC 2013**), Italy, Dec 2013 (*My contribution: 10%: I am involved in the problem definition, solution design, and writing of the paper.*)
- [C55] **[I]** **L. Mo***, **R. Cheng**, B. Kao, **X. Yang***, C. Ren, **S. Lei***, and **E. Lo***. *Optimizing Plurality for Human Intelligence Tasks*. In the 22nd ACM Conf. on Information and Knowledge Management (**ACM CIKM 2013**), San Francisco, Oct 27 – Nov 1, 2013. *Acceptance rate: 16.9% (143 out of 848 papers) (My contribution: 30%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [C56] **[I]** Z. He, P. Wong, B. Kao, E. Lo, and **R. Cheng***. *Fast Evaluation of Iceberg Pattern-Based Aggregate Queries*. In the 22nd ACM Conf. on Information and Knowledge Management (**ACM CIKM 2013**), San Francisco, Oct 27 – Nov 1, 2013. *Acceptance rate: 16.9% (My contribution: 20%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [C57] **[I]** **X. Yang***, **R. Cheng**, **L. Mo***, B. Kao, and D. Cheung. *On Incentive-based Tagging*. In Intl. Conf. on Data Engineering (**IEEE ICDE 2013**), Brisbane, Apr 2013. *Acceptance rate: 19.6% (88 out of 450 papers) (My contribution: 30%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [C58] **[I]** **L. Mo***, **R. Cheng**, **X. Li***, D. Cheung, and **X. Yang***. *Cleaning Uncertain Data for Top-k Queries*. In Intl. Conf. on Data Engineering (**IEEE ICDE 2013**), Brisbane, Apr 2013. *Acceptance rate: 19.6% (88 out of 450 papers) (My contribution: 30%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [C59] **[I]** **P. Zhang***, **R. Cheng**, N. Mamoulis, M. Renz, A. Zuefle, **Y. Tang***, and T. Emrich. *Voronoi-based Nearest Neighbor Search for Multi-Dimensional Uncertain Databases*. In Intl. Conf. on Data Engineering (**IEEE ICDE 2013**), Brisbane, Apr 2013. *Acceptance rate: 19.6% (88 out of 450 papers). (My contribution: 30%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [C60] **[I]** **Y. Jin***, **R. Cheng**, B. Kao, K. Y. Lam, and **Y. Zhang***. *A Filter-based Protocol for Continuous Queries over Imprecise Location Data*. In the 21st ACM Conf. on Information and Knowledge Management (**ACM CIKM 2012**), Hawaii, Oct 2012. *Acceptance rate: 13.4%. (My contribution: 30%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [C61] **[I]** R. Li, B. Kao, B. Bi, **R. Cheng**, and E. Lo. *DQR: A Probabilistic Approach to Diversified Query Recommendation*. In the 21st ACM Conf. on Information and Knowledge Management (**ACM CIKM 2012**), Hawaii, Oct 2012. *Acceptance rate: 13.4%. (My contribution: 20%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [C62] R. Tang, **R. Cheng**, H. Wu, and S. Bressan. *A Framework for Conditioning Uncertain Relational Data*. In the 23rd Conf. on Database and Expert Systems Applications (**DEXA 2012**), Austria, September 2012. (*My contribution: 20%: I am involved in the problem definition, solution design, and writing of the paper.*)
- [C63] **X. Xie***, **R. Cheng**, and M. L. Yiu. *Evaluating Trajectory Queries Over Imprecise Location Data*. In the 24th Intl. Conf. on Scientific and Statistical Database Management (**SSDBM 2012**), Greece, June 2012. *Acceptance rate: 51.6%. (My contribution: 40%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [C64] **[I]** **J. Gong***, **R. Cheng**, D. W. Cheung, and J. Cheng. *Evaluating Probabilistic Queries over Uncertain Matching*. In the IEEE Intl. Conf. Data Engineering (**IEEE ICDE 2012**), Washington D.C., April 2012. *Acceptance rate: 17%. (My contribution: 40%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [C65] **[I]** C. K. Chui, **R. Cheng**, B. Kao, and E. Lo. *I/O Efficient Algorithms for Evaluating Pattern-based Aggregate Queries in a Sequence OLAP System*. In the 20th ACM Conf. on Information and Knowledge Management (**ACM CIKM 2011**), Glasgow, Oct 2011. *Acceptance rate: 15%. (My contribution: 20%: I am involved in the problem definition, solution design, and writing of the paper.)*

- [C66] [I] B. Bi, S. D. Lee, B. Kao, and **R. Cheng**. *CubeLSI: An Effective and Efficient Method for Searching Resources in Social Tagging Systems*. In the IEEE Intl. Conf. on Data Engineering (**IEEE ICDE 2011**), Hannover, Germany, Apr, 2011. *Acceptance rate: 19.6% (88 out of 450 papers). (My contribution: 20%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [C67] [I] **L. Sun***, **R. Cheng**, D. W. Cheung, and **J. Cheng***. *Mining Uncertain Data with Probabilistic Guarantees*. In the 16th ACM SIGKDD Conf. on Knowledge Discovery and Data Mining (**ACM SIGKDD 2010**), Washington D.C., USA, Jul, 2010 (Full paper). *Acceptance rate: 17%; cited 153 times. (My contribution: 40%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [C68] [I] L. Wang, D. W. Cheung, **R. Cheng**, and S. D. Lee. *Accelerating Probabilistic Frequent Itemset Mining: A Model-Based Approach*. In the ACM 19th Conf. on Information and Knowledge Management (**ACM CIKM 2010**), Toronto, Canada, Oct 2010. **Selected as one of the best papers in CIKM'10** for extension in [J33]. *Acceptance rate: 13.4%. (My contribution: 30%: I am involved in the problem definition, solution design, and writing of the paper.)*
- [C69] Y. Zhang*, **R. Cheng**, and **J. Chen***. *Evaluating Continuous Probabilistic Queries over Imprecise Sensor Data*. In the Database Systems for Advanced Applications (**DASFAA**), Apr, 2010 (Full paper). *Acceptance rate: 23.2%. (My contribution: 30%: I am involved in the problem definition, solution design, and writing of the paper.)*
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