

Jiaheng Lu  
Supervisor for doctoral programme, Associate professor  
Department of Computer Science Subunit  
Unified DataBase Management System research group / Jiaheng Lu  
Doctoral Programme in Computer Science  
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## Qualifications

### Principal Investigator

Period : 16.10.2015 - \* in Department of Computer Science

## Employment

### Associate professor

Department of Computer Science Subunit  
University of Helsinki  
Finland  
1 Jan 2018 → present

### Unified DataBase Management System research group / Jiaheng Lu

University of Helsinki  
1 Jan 2016 → present

### Supervisor for doctoral programme

Doctoral Programme in Computer Science  
University of Helsinki  
1 Jan 2014 → present

## Research outputs

### Multi-model Databases: A New Journey to Handle the Variety of Data

Lu, J. & Holubová, I., Jun 2019, In : ACM Computing Surveys. 52, 3, 38 p., 55.

### UniBench: A Benchmark for Multi-Model Database Management Systems

Zhang, C., Lu, J., Xu, P. & Chen, Y., 2019, *Performance Evaluation and Benchmarking for the Era of Artificial Intelligence : 10th TPC Technology Conference, TPCTC 2018, Rio de Janeiro, Brazil, August 27–31, 2018, Revised Selected Papers*. Nambiar, R. & Poess, M. (eds.). Cham: Springer International Publishing , p. 7-23 16 p. (Programming and Software Engineering).

### Efficient Taxonomic Similarity Joins with Adaptive Overlap Constraint

Xu, P. & Lu, J., 15 Aug 2018, *CIKM '18 Proceedings of the 27th ACM International Conference on Information and Knowledge Management* . New York, NY: ACM, p. 1563-1566 4 p.

### UDBMS: Road to Unification for Multi-model Data Management

Lu, J., Liu, Z. H., Xu, P. & Zhang, C., Aug 2018, *Advances in Conceptual Modeling : ER 2018 Workshops Emp-ER, MoBiD, MREBA, QMMQ, SCME, Xi'an, China, October 22-25, 2018, Proceedings*. Woo, C., Lu, J., Li, Z., Ling, T. W., Li, G. & Lee, M. L. (eds.). Cham: Springer, p. 285-294 10 p. (Lecture Notes in Computer Science ; vol. 11158).

### Hierarchical Clustering of Complex Symbolic Data and Application for Emitter Identification

Xu, X., Lu, J. & Wang, W., Jul 2018, In : Journal of Computer Science and Technology. 33, 4, p. 807-822 16 p.

**Optimal algorithms for selecting top-k combinations of attributes: theory and applications**

Lin, C., Lu, J., Wei, Z., Wang, J. & Xiao, X., Feb 2018, In : VLDB Journal. 27, 1, p. 27-52 26 p.

**Crowd-Type: A Crowdsourcing-Based Tool for Type Completion in Knowledge Bases**

Dong, Z., Tu, J., Fan, J., Lu, J., Du, X. & Ling, T. W., 2018, p. 17-21. 5 p.

**Fusion OLAP: Fusing the Pros of MOLAP and ROLAP Together for In-memory OLAP**

Zhang, Y., Wang, S., Lu, J. & Zhang, Y., 2018, (Accepted/In press) In : IEEE Transactions on Knowledge and Data Engineering.

**Multi-model Databases and Tightly Integrated Polystores: Current Practices, Comparisons, and Open Challenges**

Lu, J., Holubová, I. & Cautis, B., 2018, *CIKM '18 Proceedings of the 27th ACM International Conference on Information and Knowledge Management*. New York, NY: ACM, p. 2301-2302 2 p.

**Using Crowdsourcing for Fine-Grained Entity Type Completion in Knowledge Bases**

Dong, Z., Fan, J., Lu, J., Du, X. & Ling, T. W., 2018, *Web and Big Data: Second International Joint Conference, APWeb-WAIM 2018, Macau, China, July 23-25, 2018, Proceedings, Part II*. Cai, Y., Ishikawa, Y. & Xu, J. (eds.). Cham: Springer International Publishing, p. 248-263 16 p. (Lecture Notes in Computer Science; vol. 10988).

**Using hybrid algorithmic-crowdsourcing methods for academic knowledge acquisition**

Dong, Z., Lu, J., Ling, T. W., Fan, J. & Chen, Y., Dec 2017, In : Cluster Computing. 20, 4, p. 3629-3641

**ProbeSim: Scalable Single-Source and Top-k SimRank Computations on Dynamic Graphs**

Liu, Y., Zheng, B., He, X., Wei, Z., Xiao, X., Zhen, K. & Lu, J., 1 Sep 2017, In : Proceedings of the VLDB Endowment. 11, 1, p. 14-26

**Distributed Algorithms on Exact Personalized PageRank**

Guo, T., Cao, X., Cong, G., Lu, J. & Lin, X., 9 May 2017, *SIGMOD '17: Proceedings of the 2017 ACM International Conference on Management of Data*. New York: ACM, p. 479-494 16 p.

**Location-sensitive Query Auto-completion**

Lin, C., Wang, J. & Lu, J., 3 Apr 2017, p. 819-820. 2 p.

**Multi-model Data Management: What's New and What's Next?**

Lu, J. & Holubová, I., 2017, *Proceeding of the 20th International Conference on extended Databases*. p. 602-605 4 p. (Proceeding of the 20th International Conference on extended Databases).

**Top-k String Auto-Completion with Synonyms**

Xu, P. & Lu, J., 2017, *Database Systems for Advanced Applications: 22nd International Conference, DASFAA 2017, Suzhou, China, March 27-30, 2017, Proceedings, Part II*. Candan, S., Chen, L., Pedersen, T. B., Chang, L. & Hua, W. (eds.). Cham: Springer International Publishing AG, Vol. 2. p. 202-218 (Lecture Notes in Computer Science; vol. 10178).

**Towards Benchmarking Multi-Model Databases**

Lu, J., 2017.

**Crowd-PANDA: Using Crowdsourcing Method for Academic Knowledge Acquisition**

Dong, Z., Lu, J. & Ling, T. W., 2016, *Web-Age Information Management, Pt II*. Cui, B., Zhang, N., Xu, J., Lian & Liu, D. (eds.). Springer, p. 531-533 3 p. (Lecture Notes in Computer Science; vol. 9659).

**Incremental Hierarchical Clustering of Stochastic Pattern-Based Symbolic Data**

Xu, X., Lu, J. & Wang, W., 2016, *Advances in Knowledge Discovery and Data Mining : 20th Pacific-Asia Conference, PAKDD 2016, Auckland, New Zealand, April 19-22, 2016, Proceedings, Part II*. Khan, L., Bailey, J., Washio, T., Dobbie, G., Huang, J. Z. & Wang, R. (eds.). Cham: Springer International Publishing AG, p. 156-167 12 p. (Lecture Notes in Computer Science ; vol. 9652).

### **PANDA: A Platform for Academic Knowledge Discovery and Acquisition**

Dong, Z., Lu, J. & Ling, T. W., 2016, *2016 International Conference on Big Data and Smart Computing, BigComp 2016, Hong Kong, China, January 18-20, 2016*. IEEE Computer Society, p. 10-17 8 p.

### **Boosting the Quality of Approximate String Matching by Synonyms**

Lu, J., Lin, C., Wang, W., Li, C. & Xiao, X., 2015, In : *ACM Transactions on Database Systems*. 40, 3, 42 p., 15.

### **Towards Maximum Independent Sets on Massive Graphs**

Liu, Y., Lu, J., Yang, H., Xiao, X. & Wei, Z., 2015, In : *Proceedings of the VLDB Endowment*. 8, 13, p. 2122-2133 12 p.

## **Activities**

### **46th International Conference on Very Large Data Bases - VLDB2020 (Event)**

Jiaheng Lu (Member)

Mar 2019 → Mar 2020

### **The 37th International Conference on Conceptual Modeling**

Jiaheng Lu (Member of organizing committee)

22 Oct 2018 → 25 Oct 2018

### **35th IEEE International Conference on Data Engineering (ICDE 2019) (Event)**

Jiaheng Lu (Board member)

1 Jul 2018 → 31 Dec 2018

### **Springer (Publisher)**

Jiaheng Lu (Reviewer)

2018

### **APWeb-WAIM 2017 (Event)**

Jiaheng Lu (Board member)

2017 → 2018

### **Australia Database Conference (Event)**

Jiaheng Lu (Board member)

2017 → 2018

### **The fourth workshop on keyword search and data exploration**

Jiaheng Lu (Chair)

20 May 2016

### **International Conference on Data Engineering (Event)**

Jiaheng Lu (Board member)

2016 → 2017

### **International Conference on Very Large Data Bases (Event)**

Jiaheng Lu (Board member)

2016 → 2017

### **ACM-Sigmod International Conference on Management of Data (Event)**

Jiaheng Lu (Board member)

2015 → 2016