

Tiantian Liu

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Research Interests

My research generally concerns data management, spatial database, data science, and data mining. Recently, I have been working on queries for indoor location-based services (LBSs). My short-term research plan is related to AI for shortest path query which is aim to improve the performance of query processing using AI models.

Education

PhD fellow in Computer Science, Aalborg University, Denmark, (Expected defense: April 2022).

MSc in Computer Science and Technology, Jilin University, China, 2018.

Exempt from Admission Exam

GPA: 85.45/100

BEng in Communication Engineering, Jilin University, China, 2015.

GPA: 86.89/100 (Top 8%)

International Study Experience

Apr. 2021 - Aug. 2021: Abroad (virtual) stay in the Faculty of Information Technology, Monash University, Australia.

Sep. 2016 - Jul. 2017: Joint training of Postgraduate Student in the Department of Computer Science and Technology, ITMO University, St Petersburg, Russia.

Publications

Peer-Reviewed Journal Articles

- **Tiantian Liu**, Zijin Feng, Huan Li, Hua Lu, Muhammad Aamir Cheema, Hong Cheng, Jianliang Xu. Towards Indoor Temporal-variation aware Shortest Path Query. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 15 pages, 2021 (to appear).
- **Tiantian Liu**, Huan Li, Hua Lu, Muhammad Aamir Cheema, Lidan Shou. Towards Crowd-aware Indoor Path Planning. *Proceedings of the VLDB Endowment (PVLDB)*, 2021: 1365-1377.

Peer-Reviewed Conference Papers

- **Tiantian Liu**, Zijin Feng, Huan Li, Hua Lu, Lidan Shou, Jianliang Xu. IKAROS: An Indoor Keyword-Aware Routing System. *IEEE 38th International Conference on Data Engineering (ICDE)*. IEEE, 2022 (to appear).

- Harry Kai-Ho Chan, **Tiantian Liu**, Huan Li, Hua Lu. Time-Constrained Indoor Keyword-aware Routing. Proceedings of the 17th International Symposium on Spatial and Temporal Databases (**SSTD**), 2021: 74-84. (Best paper nomination)
- **Tiantian Liu**, Huan Li, Hua Lu, Muhammad Aamir Cheema, Lidan Shou. Indoor Spatial Queries: Modeling, Indexing, and Processing. The 24th International Conference on Extending Database Technology (**EDBT**). 2021: 181-192.
- **Tiantian Liu**, Zijin Feng, Huan Li, Hua Lu, Muhammad Aamir Cheema, Hong Cheng, Jianliang Xu. Shortest Path Queries for Indoor Venues with Temporal Variations. IEEE 36th International Conference on Data Engineering (**ICDE**). IEEE, 2020: 2014-2017.
- Zijin Feng, **Tiantian Liu**, Huan Li, Hua Lu, Lidan Shou, Jianliang Xu. Indoor Top-k Keyword-aware Routing Query. IEEE 36th International Conference on Data Engineering (**ICDE**). IEEE, 2020: 1213-1224.
- **Tiantian Liu**, Zhiyi Fang, Chen Zhao, Yingmin Zhou: Parallelization of A Series of Extreme Learning Machine Algorithms based on Spark. **ICIS** 2016: 1-5.

Technical Reports

- **Tiantian Liu**, Huan Li, Hua Lu, Muhammad Aamir Cheema, Lidan Shou. An Experimental Analysis of Indoor Spatial Queries: Modeling, Indexing, and Processing. CoRR abs/2010.03910 (2020).
- **Tiantian Liu**, Huan Li, Hua Lu, Muhammad Aamir Cheema, Lidan Shou. Towards Crowd-aware Indoor Path Planning(Extended Version). CoRR abs/2104.05480 (2021).

Manuscript under Review

- **Tiantian Liu**, Huan Li, Hua Lu, Muhammad Aamir Cheema, Lidan Shou. Contact Analysis over Uncertain Indoor Positioning Data.

Teaching Experience

- **Autumn 2020:** Supervisor of SW7 Project (Topic: COVID-19 Safe-Distance Route Calculation System), Aalborg University. (6 students)
- **Autumn 2020:** Supervisor of SW7 Project (Topic: Wine Offer Recommender System for Traders), Aalborg University. (5 students)
- **Autumn 2020:** Teaching Assistant for Course "Database Development", Aalborg University. (50+ students)
- **Spring 2020:** Supervisor of BaIT4 Project (Topic: Todozo - A Task Management System), Aalborg University. (5 students)
- **Spring 2020:** Teaching Assistant for Course "Database Development", Aalborg University. (90+ students)
- **Autumn 2019:** Supervisor of SW3 Project (Topic: Butlr: Modelling and Developing a Digital Catering System for Dania Academy, using Object-Oriented Analysis & Design), Aalborg University. (7 students)
- **Autumn 2019:** Supervisor of SW3 Project (Topic: An Inventory Management System for a Comic Book Store), Aalborg University. (7 students)

- **Autumn 2019:** Supervisor of SW3 Project (Topic: Matching Persons with Start-ups and Back Again), Aalborg University. (7 students)
- **Spring 2019:** Co-supervisor of SW6 Project (Topic: GIRAF), Aalborg University. (8 students)
- **Spring 2019:** Teaching Assistant for Course "Database Development", Aalborg University. (100+ students)

Honors and Awards

- 2017: Academic Scholarship for Postgraduate Student, Jilin University, China
- 2016: Academic Scholarship for Postgraduate Student, Jilin University, China
- 2015: Excellent New Student Scholarship for Postgraduate Student, Jilin University, China
- 2015: Academic Scholarship for Postgraduate Student, Jilin University, China
- 2014: Second-class Scholarship, 2013-2014 Academic Year, Jilin University, China
- 2013: Second-class Scholarship, 2012-2013 Academic Year, Jilin University, China
- 2013: Prize of Excellent Student in School of Communication Engineering, Jilin University, China
- 2012: First-class Scholarship, 2011-2012 Academic Year, Jilin University, China

Computer skills

Programming: Python, Java, MATLAB, HTML, CSS

Database: MySQL

Typography: L^AT_EX, Microsoft Office

Languages

Chinese (native)

English (fluent): IELTS scores: 6.5