Wei Tian

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EDUCATION

Sep. 2021 – Present	Doctor of Philosophy in Computer Science, **Hong Kong Polytechnic University**
	Supervisor: Dr. Jieming Shi
Sep. 2017 – Jul. 2020	Master of Engineering in Computer Technology, **Sichuan University**
	Supervisor: Prof. Min Zhu
	Avg Score: 84.00 / 100 **GPA**: 3.45 / 4.0 **Rank**: Top-20
Sep. 2013 – Jul. 2017	Bachelor of Engineering in Computer Science and Technology, **Sichuan University**
	Avg Score: 87.52 / 100 **GPA**: 3.52 / 4.0 **Rank**: 24th out of 361 **First Class Honors**

RESEARCH INTERESTS

Spatial and Temporal Data Management, Urban Computing, Geo-spatial Data Analysis and Visualization

PUBLICATIONS

[1] **Wei Tian**, Jieming Shi, Siqiang Luo, Hui Li, Xike Xie, Yuanhang Zou. Effective and Efficient Route Planning Using Historical Trajectories on Road Networks. **PVLDB 2023**, in the Proceedings of the VLDB Endowment, 2023.

[2] Hai Lan, Jiong Xie, Zhifeng Bao, Feifei Li, **Wei Tian**, Fang Wang, Sheng Wang, Ailin Zhang. VRE: A Versatile, Robust, and Economical Trajectory Data System. **PVLDB 2022**, 15(12): 3398-3410 (2022).

[3] Di Peng, **Wei Tian**, Min Zhu, Yukun Ren, Xiaojian Lin, Mingzhao Li. TargetingVis: Visual Exploration and Analysis of Targeted Advertising Data. *Journal of Visualization,* 2020, 23: 1113–1127.

[4] Di Peng, **Wei Tian**, Binbin Lu, Min Zhu. DMNEVis: A Novel Visual Approach to Explore Evolution of Dynamic Multivariate Network. *IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, 2018, pp. 4304–4311.

[5] Min Zhu, **Wei Tian**, Di Peng, Yabo Su, Hao Niu. Method of Predicting User Professionalism Based on Question Granularity in Community Question Answering. *Advanced Engineering Sciences*, 2019, 51(1): 173-180.

[6] Min Zhu, Jianhua Wang, Xiaowei Li, **Wei Tian**. Fast Percentage Closer Soft Shadows. *Advanced Engineering Sciences*, 2019, 51(4): 140-146.

[7] Min Zhu, Li Chen, Qin Li, **Wei Tian**, et.al. **Book**: Handbook of Computer Network Course Projects (in Chinese: 计算机网络课程设计). *China Machine Press (机械工业出版社)*, ISBN: 978-7-111-61139-4, 2018.

[8] 朱敏, 彭第, 韦东鑫, **田伟**, 李亚男, 任宇堃, 林晓健. 层次数据的关联关系可视化处理方法、服务器及存储介质: 中国, 201911287989.8[P].

[9] 朱敏, 李亚男, 彭第, 游思兰, 韦东鑫, **田伟**. 一种气泡层次可视化中气泡分离方法: 中国, 201811300412.1[P].

RESEARCH EXPERIENCE

Aug. 2020 – Jun. 2021	*NoSQL Storage Engine for Big Trajectory Data Management and Analysis*

Research Intern in Database and Storage Laboratory, **Alibaba DAMO Academy**.

❖ Propose a Segment-based model to storing massive trajectory data, which saves about 3x – 4x storage cost.

❖ Based on the Segment-based model, make the query performance of five basic categories 2x faster than existing methods.

❖ Based on HBase, develop a storage engine for trajectory data.

Aug. 2019 – Dec. 2019	*Research on visualization recommendation for relational data based on visual analytical task*

ISAR (Information Storage, Analysis and Retrieval) Research Group, **RMIT University**.

Visiting Student   **RMIT Supervisor**: Associate Professor Zhifeng Bao

❖ Propose an end-to-end joint embedding learning framework, which aims to learn the association between Data-Task and visualization Views.

❖ Propose a recommendation algorithm for visualization by fusing dataset features, analytical task features and visualization features with attention mechanism.

Jan. 2019 – Apr. 2019	*A Carpooling Algorithm Based on Region Division Using Trajectory Data*

❖ Propose a dividing urban area algorithm based on trajectory data by considering traffic conditions and semantic information in sub-regions.

❖ Propose a new carpooling model based on sub-regions by pruning the search space of matching riders and vehicles in region-level.

May 2018 – May 2019	*Research on selection pattern of advertising targets based on visual analysis*

Project supported by **Tencent Rhino Bird Program** (Grant No. 18H0487) (¥200,000)

Research Assistant
- ❖ Model the advertising behaviors of advertisers with multiple dimensions, such as industry type and product type.
- ❖ Analyze effect and relationship of targets, discovering classic cases and patterns in targets system.

Jan. 2018 – Dec. 2019   *Visual recommendation system based on user-generated content of tourism*

Project supported by **Sichuan Science and Technology Program of China** (Grant No. 2018GZ0171) (¥200,000)

Research Assistant
- ❖ Mine the frequent patterns of travel sequences from the massive travel blog contents by using NLP methods.
- ❖ Detect tourism area and popular local trip route.

Feb. 2018 – May 2018   *Visual Approach to Explore Evolution of Dynamic Multivariate Network*
- ❖ Propose a network visualization method based on community partitioning and hierarchical progress (group network exploration).
- ❖ Design a vertical stacking and adjustable network visualization method (ego-centric network exploration)

Oct. 2017 – Jan. 2018   *Expert Recommendation in Community Question Answering*
- ❖ Classify expertise metrics into community-level, topic-level and question-level, then propose a question-level expertise modeling method.
- ❖ Propose an expert recommendation algorithm by incorporating authority, interest and expertise.

PROFESSIONAL ACTIVITIES

Teaching Assistant	COMP4434, Big Data Analytics, Spring 2023, Hong Kong Polytechnic University
Teaching Assistant	COMP5434, Big Data Computing, Fall 2022, Hong Kong Polytechnic University
Teaching Assistant	COMP5434, Big Data Computing, Spring 2022, Hong Kong Polytechnic University
Teaching Assistant	ENG2002, Computer Programming, Fall 2021, Hong Kong Polytechnic University
Invited Talks	Jun. 2021: Vision Computing Lab, Sichuan University, China
Teaching Assistant	Urban Computing, Summer Term 2019, Sichuan University, China
Teaching Assistant	Big Data Management, Summer Term 2018, Sichuan University, China
Teaching Assistant	Course of Computer Network, Fall 2017, Sichuan University, China
External Reviewers	IEEE International Conference on Systems, Man, and Cybernetics (IEEE SMC'2018)
Membership	China Computer Federation Student Member

REPRESENTATIVE AWARDS

- The Hong Kong Polytechnic University Research Postgraduate Scholarship (2021)
- Outstanding Master Graduates of Sichuan University (2020)
- First-class of Excellent Postgraduate Scholarship by Sichuan University (2019)
- Outstanding Postgraduate of Sichuan University (2019)
- HUAWEI Scholarship of Sichuan University (2018)
- Outstanding student member of Sichuan University Branch of CCF (2018)
- Honorable mention of ChinaVis Data Challenge (Qingdao'2017)
- Outstanding Student of Sichuan University (2016)
- 2×National Encouragement Scholarship (2014, 2016)
- 2×Third-class of Excellent Undergraduate Scholarship by Sichuan University (9%) (2014, 2016)
- Second Prize of Sichuan Regional Contest of 7th Lan Qiao Cup (2016)