Guanli Liu

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Skills

- Programming languages: Java, Python, C++
- Machine learning tools: TensorFlow, PyTorch, TorchLib, Scikit-learn, Weka,
- Research interests: AI for DB, Learned index, Spatial index, Spatial data management

Education

The University of Melbourne, Melbourne, Australia Jun. 2019 – Present (expected **Jul. 2023**)

PhD Candidate in Computing and Information System (GPA: H1)

Northeastern University, Shenyang, China Aug. 2013 – Jun. 2015

M.S. in Computer Technology (GPA: 87.67 / 100 – Top 10%)

Northeastern University, Shenyang, China Aug. 2009 – Jun. 2013

B.Eng. in Software Engineering (GPA: 82.65 / 100 – Top 20%)

Experience

The University of Melbourne, Victoria, Australia Aug. 2019 – Present

Tutor Comp90018 (Mobile Computing) & Comp90041 (Programming and Software Development)

- **Android** (Comp90018) and **Java** (Comp90041) demonstration for about 100 students each term
- Project guidance and assignment marking for each team (5 or 6 students)

Baidu Inc., Beijing, China Jul. 2015 – Aug. 2017

Senior Researcher and Developer Android Development (**Java**)

Worked in an Android Development group focusing on Instant Messaging (IM) software development, which is part of an enterprise intelligent work platform [**infoflow**] for all employees in Baidu and cooperative enterprises. Key contributions are as follows:

- Designed new message protocols, e.g., Recall message, Delete message, Red pocket Message, etc.
- Designed Voice Assistant module by voice recognition SDK to send message, order meeting room, etc.
- Optimised the database retrieval efficiency by about 20% by optimising database table index.
- Optimised application centre UI with flexible configuration by new widgets.
- Improved all message module development efficiency by using design patterns, e.g., Builder.
- Analysed, fixed, and documented tough bugs.

Publications

- Guanli Liu, Lars Kulik, Xingjun Ma, Jianzhong Qi. A Lazy Approach for Efficient Index Learning. arXiv preprint arXiv:2102.08081. [**source code**] (**C++**)
- Jianzhong Qi (supervisor), Guanli Liu, Christian S. Jensen, and Lars Kulik. Effectively Learning Spatial Indices. PVLDB, 13(11): 2341-2354, 2020. [**source code**] (**C++**)
- Yu Gu (supervisor), Guanli Liu, Jianzhong Qi, Hongfei Xu, Ge Yu, and Rui Zhang. The Moving K Diversified Nearest Neighbor Query. TKDE, 28(10): 2778-2792, 2016.

Honors and Awards

Yearly performance appraisal in Baidu *Top 20%* 2016
Outstanding master student *Top 5%* 2014
3^{rd} *Prize* prize of American college students' mathematical modelling contest 2011
3^{rd} *Prize* prize of Google Android application development in China 2011