Mr. Tianrun Li

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Education Background

Department of Computer Science and Technology, Tsinghua University   09/2012-06/2016

GPA: 91/100   Department Ranking: 9/116

Research Experiences

Research Intern at Knowledge Engineering Group (10/2014- 07/2015)   *Advisor: Dr. Jie Tang*

- Participated in text mining projects using machine learning algorithms;
- Similar document search using LDA and q-Gram for both semantic and literal similarity;
- Sentiment analysis for millions of Weibo (Chinese version of Twitter) repost data using emotion icon, with no need of human labeling of sentiment as training data.

Research Intern at Imperial College London (07/2015-08/2015)   *Advisor: Dr. Thomas Heinis*

- Proposed an approximate optimization of DBSCAN clustering algorithm;
- Highly scalable for large datasets and high dimensional data, one order of magnitude faster than state-of-the-art approximate DBSCAN algorithm;
- Optimization of Locality Sensitive Hashing using Maxeler Dataflow Engine, this project is now added to the Maxeler Application Gallery.

Group Member of AMiner.org (09/2015-Present)   *Advisor: Dr. Jie Tang*

- Developed a knowledge graph to automatically detect how research topics evolve in time;
- Characterized and categorized statistical features of the topics such as their time distribution. Implemented factor graph model to detect evolution relationship;
- Developed interactive learning algorithm based on user feedback to further improve the accuracy.

Projects

OurSQL: Single User Relational Database (11/2014-01/2015)

- Implemented a database management system with B+ tree index, aggregate queries, relational integrity constraint and inner join on multiple tables
- Completed over 6000 lines of code in C++, portable among Linux, Mac OS X and Windows
- Same grammar as MySQL, regular expression is supported

Cache-CPU: MIPS32 Computer System Design (10/2014-12/2015)

- CPU hardware design written in VHDL, implemented MMU and TLB, support 48 instructions
- Implemented interrupts, exception handling and privilege level, able to run a Unix-like OS
- Added a Decaf/Mind cross-compiler and various applications to build a complete computer system

Manuscript List

Tianrun Li, Thomas Heinis, Wayne Luk, "ADvaNCE: Hashing-based Approximate DBSCAN", **International Conference on Extending Database Technology 2016**, submitted for review.

Extracurriculars & Honors

- Awarded the National Scholarship of China (top 3 in department) in 2014
- Awarded the Tung OOCL Scholarship in 2015
- Class monitor (09/2013-06/2014); Won Outstanding Class Award, first place in CS Department

Skills

- **Programming language:** C++(highly proficient), Python, JAVA
- **Skills:** Machine learning, data mining, database, Linux
  All projects and coding history can be found on https://github.com/Terranlee
- **GRE:** V 152 (54%)   Q 168 (95%)   A/AW 4.0 (56%)
- **TOEFL:** 106 (R:29   L:28   W:27   S:22)