Jialin WAN

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EDUCATION

Harbin Institute of Technology (HIT, member of C9 League) Harbin, China
M.Phil. in Computer Science. 2015.09-2017.07

- Research Topic: Sensor Networks. Mentor: Prof. Jianzhong Li.
- GPA: 84.29/100.

Harbin Institute of Technology Harbin, China
B.E. in Computer Science. 2011.09-2015.07

- GPA: 86.89/100, Rank: 19/171.
- Math Courses: Mathematical Analysis (100); Linear Algebra and Analytic Geometry (97); Numerical Method (98); Probability Theory (98); Mathematical Logic (98); Mathematical Statistics (94); Modern Algebra (98); Mathematical Modeling (91).
- Hardware Courses : Electric Circuit (100); Introduction to Electronic Technology (93); Computer Design and Practice (92); Computer Interface Technology (91); Digital Logic Design(90); Computer Architecture (89); Embedded Systems (86).

PUBLICATIONS

[1] **Jialin Wan**, Siyao Cheng, Shanshan Han, Jianzhong Li. **Optimal Scheduling of Friendly Jammers for Securing Wireless Communication.** *CoRR, 2017.* [Link]

[2] Tuo Shi, **Jialin Wan**, Siyao Cheng, Zhipeng Cai, Yingshu Li, Jianzhong Li. **Time-Bounded Positive Influence in Social Networks.** *IEEE IIKI, 2015.* [Link]

[3] Shanshan Han, Hongzhi Wang, **Jialin Wan**, Jianzhong Li. **An Iterative Scheme for Leverage-based Approximate Aggregation.** *Submitted to ICDE, 2019.* [Link]

[4] **Jialin Wan**, Siyao Cheng. **An Efficient Visualization Algorithm in Wireless Sensor Networks.** *SciencePaper Online.* [Link]

PATENTS

- Shanshan Han, Hongzhi Wang, **Jialin Wan**. **A Method of Leverage-based AVG Aggregation on Big Data.** China. Patent Number: 2017101754584.

PROFESSIONAL EXPERIENCE

Research Assistant @ System networkING (SING) Lab, HKUST, Hong Kong. 2017-2018
Interest area: Data Center, AI Cloud; Advisor: Prof. Kai Chen.

Topic: AI Cloud implementation with RDMA support.

- Configured mainstream AI platforms, including Tensorflow, MXNet, Caffe2 and Pytorch, to support RDMA between GPUs, in order to achieve lower latency, lower CPU load and higher bandwidth.

Research Assistant @ Massive Data Computing Research Center, HIT, Harbin. 2015-2017
Interest area: Sensor Networks, Social Networks, Privacy, Big Data; Advisor: Prof. Jianzhong Li.

Topic: Optimal Scheduling of Friendly Jammers for Securing Wireless Communication.

- Studied the schedule strategies of friendly jammers, which can be unrechargeable or rechargeable, to prevent eavesdroppers and maximize the lifetime of the jammer networks.

- Abstracted an optimization problem, then further modeled the problem as ILP in each step.
- Devised a greedy algorithm based on the recharge rate and discharge rate of jammers, to minimize the energy consumption during each step.
- Proved NP-hardness by reduction to Maximum Independent Set problem.

Topic: Time-Bounded Positive Influence in Social Networks.

- To find the Positive Influence Dominating Set with time factor taken into account.
- Devised a greedy algorithm by building a Spread-graph according to relative position, and moving nodes greedily between layers.

Teaching Assistant @ NVIDIA Deep Learning Institute Workshop. 2017
Teaching Assistant @ Theory of Computation. Advisor: Prof. Jianzhong Li. 2016

Projects

Android Application: Data Visualization for Sensor Networks. *JAVA, PHP.* @Github

- Translated raw data into graphical representation.
- Supported zooming and aggregation query.

VHDL Designing and Modeling in FPGA-based Embedded CPU. *VHDL.* @GitHub

- Designed the logical circuit of a simple CPU with 6 modules, i.e. clock module, instruction fetch module, ALU module, memory module, write back module, and memory control module, then implemented on an FPGA board.

Simple Compiler of C Language. *C++.* @GitHub

- Built a simple compiler including lexical analysis, grammatical analysis, semantic analysis, and intermediate code generation.

More projects can be found @GitHub **or** @YouTube.

Honors and Awards

- First-Class People's Scholarship (Top 1%)
- National Scholarship for Encouragement (Top 3%, twice)
- First-Class Postgraduate Scholarship (twice)
- Suzhou Industrial Park Scholarship (Top 6%)
- Third-Class People's Scholarship (triple)
- Successful participant of Mathematical Contest in Modeling

Skills

Programming: C, C++, python, PHP, LINGO.
Database: SQL, MySQL.
Hardware: VHDL.
Platform & Framework: Linux, Tensorflow, Pytorch.
Sports: Badminton, Swimming.