Jialin Ding

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EDUCATION

Massachusetts Institute of Technology 2018–Present
PhD, Computer Science

Stanford University 2014–2018
Bachelor of Science with Distinction, Electrical Engineering
Minor in Economics

RESEARCH PROJECTS

Adaptive Tree Learned Index: An Updatable Learned Index for Range Queries

- A range index that incorporates knowledge of the data distribution through ML models to achieve comparable update time, better lookup time, and smaller index size than a B-tree across a variety of datasets.
- Work done at Microsoft Research with Umar Farooq Minhas and the Database Group.

Moments-Sketch: A Quantile Sketch for High Cardinality Aggregation Queries

- A quantile sketch based on the method of moments that performs better than state-of-the-art quantile sketches for queries that require large numbers of merges.
- Work done at Stanford with Peter Bailis and the Future Data group.

INDUSTRY EXPERIENCE

Research Intern, Microsoft Research, Redmond Summer 2018

- Implemented and evaluated an updatable learned index structure for range queries.

Software Engineer Intern, Google Summer 2016

- Worked on Google Safe Browsing.
- Implemented a MapReduce pipeline to integrate Chrome browser incident data into the evalutation of user downloads.

Software Engineer Intern, Thumbtack Summer 2015

- Worked on SEO, automatic text generation, and recommendation systems.

PUBLICATIONS

Moment-Based Quantile Sketches for Efficient High Cardinality Aggregation Queries. Edward Gan, Jialin Ding, Kai Sheng Tai, Vatsal Sharan and Peter Bailis. *VLDB 2018.*

Efficient Mergeable Quantile Sketches using Moments. Edward Gan, Jialin Ding, Peter Bailis. *SysML 2018. Extended Abstract.*

MacroBase: Prioritizing Attention in Fast Data. Peter Bailis, Edward Gan, Samuel Madden, Deepak Narayanan, Kexin Rong, Sahaana Suri and Jialin Ding. *To appear in ACM Transactions on Database Systems.*

A Machine-Compiled Database of Genome-Wide Association Studies. Volodymyr Kuleshov, Jialin Ding, Braden Hancock, Alexander Ratner, Christopher

Re, Serafim Batzoglou and Michael Snyder. *25th Conference on Intelligent Systems for Molecular Biology (ISMB) 2017. Short Paper.*

FELLOWSHIPS AND AWARDS

- NSF Graduate Research Fellowship Program, Honorable Mention, 2018
- MIT Jacobs Presidential Fellowship, 2018