Jialin Ding

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EDUCATION

Massachusetts Institute of Technology 2018–Present
PhD, Computer Science
Advisor: Tim Kraska

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

PUBLICATIONS

1. **Cortex: Harnessing Correlations to Boost Query Performance.** Vikram Nathan, Jialin Ding, Tim Kraska and Mohammad Alizadeh. *Preprint.*
2. **Tsunami: A Learned Multi-dimensional Index for Correlated Data and Skewed Workloads.** Jialin Ding, Vikram Nathan, Mohammad Alizadeh and Tim Kraska. *VLDB 2021.*
3. **Instance-Optimized Data Layouts for Cloud Analytics Workloads.** Jialin Ding, Umar Farooq Minhas, Badrish Chandramouli, Chi Wang, Yinan Li, Ying Li, Donald Kossmann, Johannes Gehrke and Tim Kraska. *SIGMOD 2021.*
4. **The Case for Learned Spatial Indexes.** Varun Pandey, Alexander van Renen, Andreas Kipf, Ibrahim Sabek, Jialin Ding and Alfons Kemper. *AIDB Workshop @ VLDB 2020.*
5. **ALEX: An Updatable Adaptive Learned Index.** Jialin Ding, Umar Farooq Minhas, Jia Yu, Chi Wang, Jaeyoung Do, Hantian Zhang, Yinan Li, Badrish Chandramouli, Johannes Gehrke, Donald Kossmann, David Lomet and Tim Kraska. *SIGMOD 2020.*
6. **Learning Multi-dimensional Indexes.** Vikram Nathan*, Jialin Ding*, Mohammad Alizadeh and Tim Kraska. *SIGMOD 2020.*
7. **LISA: Towards Learned DNA Sequence Search.** Darryl Ho, Jialin Ding, Sanchit Misra, Nesime Tatbul, Vikram Nathan, Vasimuddin Md and Tim Kraska. *Systems for ML Workshop @ NeurIPS 2019. Oral Presentation.*
8. **Learning Multi-dimensional Indexes.** Vikram Nathan*, Jialin Ding*, Mohammad Alizadeh and Tim Kraska. *ML for Systems Workshop @ NeurIPS 2019. Oral Presentation.*
9. **SageDB: A Learned Database System.** Tim Kraska, Mohammad Alizadeh, Alex Beutel, Ed Chi, Jialin Ding, Ani Kristo, Guillaume Leclerc, Samuel Madden, Hongzi Mao and Vikram Nathan. *CIDR 2019.*
10. **A Machine-compiled Database of Genome-wide Association Studies.** Volodymyr Kuleshov, Jialin Ding, Christopher Vo, Braden Hancock, Alexander Ratner, Yang Li, Christopher R, Serafim Batzoglou and Michael Snyder *Nature Communications 2019.*
11. **Moment-Based Quantile Sketches for Efficient High Cardinality Aggregation Queries.** Edward Gan, Jialin Ding, Kai Sheng Tai, Vatsal Sharan and Peter Bailis. *VLDB 2018.*

12. **Efficient Mergeable Quantile Sketches using Moments.** Edward Gan, Jialin Ding and Peter Bailis. *SysML 2018. Extended Abstract.*
13. **MacroBase: Prioritizing Attention in Fast Data.** Firas Abuzaid, Peter Bailis, Jialin Ding, Edward Gan, Samuel Madden, Deepak Narayanan, Kexin Rong and Sahaana Suri. *TODS 2018.*
14. **A Machine-Compiled Database of Genome-Wide Association Studies.** Volodymyr Kuleshov, Jialin Ding, Braden Hancock, Alexander Ratner, Christopher Re, Serafim Batzoglou and Michael Snyder. *ISMB 2017. Short Paper.*

SERVICE

- TKDE External Reviewer, 2020

INVITED TALKS

Learned Index Structures for Dynamic and Multi-Dimensional Data
University of Washington (NWDS Seminar) February 2021

Instance-optimized Indexing and Storage
Cornell University (DB Seminar) October 2020

Learning Multi-dimensional Indexes
Boston University (MiDAS Seminar) April 2020
New England Database Day January 2020

FELLOWSHIPS AND AWARDS

- Facebook Fellowship, 2021
- NSF Graduate Research Fellowship Program, Honorable Mention, 2018
- MIT Jacobs Presidential Fellowship, 2018

INDUSTRY EXPERIENCE

Research Intern, Microsoft Research, Redmond Summer 2020
- Led research on a data layout framework for cloud analytics services, with applications to Azure Synapse, resulting in a SIGMOD 2021 publication.

Research Intern, Microsoft Research, Redmond Summer 2018
- Led research on an updatable learned index structure, resulting in a SIGMOD 2020 publication.

Software Engineer Intern, Google Summer 2016
- As part of Google Safe Browsing, implemented a MapReduce pipeline to integrate Chrome browser incident data into the evaluation of user downloads.

Software Engineer Intern, Thumbtack Summer 2015
- Worked on SEO, automatic text generation, and recommendation systems.