Chenggang Wu

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EDUCATION

University of California, Berkeley

- Doctor of Philosophy (Ph.D.) in Computer Science — Aug 2015 – Present
  - Adviser: Joseph M. Hellerstein
  - Research areas: Data-centric Systems, Distributed Systems, Machine Learning

Brown University

- Bachelor of Science (B.S.) in Computer Science — May 2015
  - Magna cum laude with Honors in Computer Science.
  - Cumulative GPA: 4.0 / 4.0

RESEARCH EXPERIENCE

RISE Lab, UC Berkeley — Sep 2016 – Present

- Hydro: a platform for stateful serverless computing that achieves an order-of-magnitude faster performance and stronger consistency than the state-of-the-art.
- Anna: an ultra-fast, flexibly consistent, autoscaling and cost-effective Key-Value Store.
- AFT: a fault tolerance shim for serverless applications that guarantees atomic visibility of updates.
- Naru: using deep unsupervised learning models to estimate the cardinality of SQL queries.

CISL Lab, Microsoft — May 2017 – Oct 2018

- CardLearner: a system that learns cardinality models from previous query executions and uses them to aid the query optimizer in predicting the cardinalities of future queries.

Data Management Research Group, Brown University — Jan 2014 – May 2015

- S-Store: a transactional stream processing system that simultaneously accommodates OLTP workload and streaming applications.
- Seer: a predictive prefetching and caching middleware for exploratory visualization of big data.

PUBLICATIONS

[1] *Deep Unsupervised Cardinality Estimation*.
Zongheng Yang, Eric Liang, Amog Kamsetty, **Chenggang Wu**, Yan Duan, Xi Chen, Pieter Abbeel, Joseph M. Hellerstein, Sanjay Krishnan, Ion Stoica.
VLDB 2020.

[2] *Autoscaling Tiered Cloud Storage in Anna*.
Chenggang Wu, Vikram Sreekanti, Joseph M. Hellerstein.
VLDB 2019, Best of Conference Selection.

[3] *Anna: A KVS For Any Scale*.
Chenggang Wu, Jose Faleiro, Yihan Lin, Joseph M. Hellerstein.
TKDE 2019 (to appear), "Best of ICDE 2018" Special Issue.

[4] *Serverless Computing: One Step Forward, Two Steps Back*.
Joseph M. Hellerstein, Jose Faleiro, Joseph E. Gonzalez, Johann Schleier-Smith, Vikram Sreekanti, Alexey Tumanov, **Chenggang Wu**.
CIDR 2019.

[5] *Towards a Learning Optimizer for Shared Clouds*.
Chenggang Wu, Alekh Jindal, Saeed Amizadeh, Hiren Patel, Wangchao Le, Shi Qiao, Sriram Rao.
VLDB 2019.

[6] *Anna: A KVS For Any Scale*.
Chenggang Wu, Jose Faleiro, Yihan Lin, Joseph M. Hellerstein.
ICDE 2018, Best of Conference Selection.

INVITED TALKS

Serverless Computing: One Step Forward, Two Steps Back
- QCon New York, June 2019
- Craft Conference, May 2019

Learning from Queries vs Learning from Data
- VLDB 2019, August 2019

Autoscaling Tiered Cloud Storage in Anna
- VLDB 2019, August 2019
- Alibaba Group, October 2018
- RISE Lab Retreat, May 2018
- Amazon Web Services, May 2018

Towards a Learning Optimizer for Shared Clouds
- VLDB 2019, August 2019
- Microsoft, August 2017

Anna: A KVS For Any Scale
- Alibaba Group, October 2018
- RISE Lab Retreat, May 2018
- Amazon Web Services, May 2018
- ICDE 2018, April 2018

PROFESSIONAL SERVICES

Reviewer for TKDE 2019.

U.C. Berkeley EECS Graduate Admissions Committee Member.

Organizer of Database Seminar for Berkeley Database Group.

TEACHING

Graduate Student Instructor, UC Berkeley
- CS186/286A: Introduction to Database Systems, Spring 2018
  - with Prof. Mehul Shah
- CS186/286A: Introduction to Database Systems, Spring 2016
  - with Prof. Joseph E. Gonzalez and Prof. Joseph M. Hellerstein

Head Teaching Assistant, Brown University
- CS1951A: Introduction to Data Science, Spring 2015
  - with Prof. Tim Kraska
- CS1270: Database Management Systems, Fall 2014
  - with Prof. Stan Zdonik

ACADEMIC AWARDS

Best of Conference Selection: Autoscaling Tiered Cloud Storage in Anna, VLDB 2019

Best of Conference Selection: Anna: A KVS For Any Scale, ICDE 2018

TECHNICAL BACKGROUND

Advanced Coursework: Artificial Intelligence, Databases, Data Science, Distributed Systems, Machine Learning, Parallel Computing, Programming Languages & Compilers, Algorithms, Systems Security.

Programming: C/C++, Python, Java, JavaScript, Scala.