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Research

I am interested in applying mathematics to design intelligent and safe systems for data processing. My study focuses controlling false discovery in data science. I also study encrypted SQL databases for provable security. In the past, I have also dabbled in approximate data structures for visualization, database design on hybrid and non-volatile memory, consistency control for stochastic machine learning algorithms, and symmetric searchable encryption on mobile text messaging.

Education

Ph.D. Candidate in Computer Science, Brown University, expected 2019.
Advisor: Prof. Tim Kraska

M.S. in Computer Science, Brown University, 2016.
Advisor: Prof. Stan Zdonik

B.S. in Computer Science, University of Wisconsin at Madison, 2012.
Advisor: Prof. Jignesh Patel

Experiences

Research Assistant at Brown University, RI, 2014 – now.

Teaching Assistant at Brown University, RI, 2015.

Research Intern at Intel Labs, CA, 2015.

Software Engineer at Hadapt Inc. (Acquired by Teradata), MA, 2013 – 2014.

Software Engineer Intern at Kosmix Inc. (Acquired by @WalmartLabs), CA, 2012.

Software Engineer Intern at Great Lakes Bioenergy Research Center, WI, 2010 – 2012.

Honors

Eta Kappa Nu

Upsilon Pi Epsilon

Golden Key International Honour Society

Articles

Signal Search.
J. Engelman, S. Kamara, T. Moataz and S. Zhao,
Software release: `http://github.com/encryptedsystems/Searchable-Signal-Android`.
Press release: `http://esl.cs.brown.edu/blog/signal`, April 2017.

Controlling False Discoveries During Interactive Data Exploration.
Z. Zhao, L. De Stefani, E. Zgraggen, C. Binnig, E. Upfal and T. Kraska,
SIGMOD, May 2017.

Safe Visual Data Exploration.
Z. Zhao, E. Zgraggen, L. De Stefani, C. Binnig, E. Upfal and T. Kraska,
SIGMOD Demo, May 2017.

Bridging the Gap between HPC and Big Data frameworks.
M. Anderson, S. Smith, N. Sundaram, M. Capota, Z. Zhao, S. Dulloor, N. Satish and T. Willke,
VLDB, 2017.

Towards Sustainable Insights.
C. Binnig, L. De Stefani, T. Kraska, E. Upfal, E. Zgraggen and Z. Zhao,
CIDR, January 2017.

Towards a Benchmark for Interactive Data Exploration.
P. Eichmann, E. Zgraggen, Z. Zhao, C. Binnig, T. Kraska.
IEEE Data Engineering Bulletin, 2016.

Larger-than-memory data management on modern storage hardware for in-memory OLTP database systems.
L. Ma, J. Arulraj, S. Zhao, A. Pavlo, S. Dulloor, M. Giardino, J. Parkhurst, J. Gardner, K. Doshi and S. Zdonik,
DaMoN, June 2016.

VisTrees: Fast Indexes for Interactive Data Exploration.
M. El-Hindi, Z. Zhao, C. Binnig and T. Kraska,
HILDA, June 2016.

Data Tiering in Heterogeneous Memory Systems.
S. Dulloor, A. Roy, Z. Zhao, N. Sundaram, N. Satish, R. Sankaran, J. Jackson and K. Schwan,
EuroSys, April 2016.