

Rebecca Y. Taft
Cockroach Labs
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Work Experience

- Cockroach Labs** – Staff Software Engineer October 2017-Present
- Currently working as a software engineer on CockroachDB, a strongly-consistent, globally distributed SQL database.
 - Working with the Query Optimizer team to build a Cascades-style cost-based SQL optimizer for CockroachDB.
- Google** – Software Engineering Intern June 2015-August 2015
- Worked on the Ads Data Infrastructure team on an OLAP query execution engine and caching layer over Google ads data.
 - Built a tool to select materialized views based on frequent itemset mining of past client requests.
- Bloomberg LP** – Financial Software Developer August 2010-August 2012
- Worked as a software developer on the MSG team, the core Bloomberg terminal email and messaging system.
 - Helped create a new client-facing collaboration tool for writing and sharing notes. Designed and created several databases and services as well as a user interface for adding and editing notes.
- Exeter Group Consulting of Massachusetts** – IT Consultant September 2008-August 2010
- Worked on a multi-year project as a project management and monitoring partner for a large public university PeopleSoft implementation.
 - Developed data interfaces and reports using SQL, PL/SQL and Appworx technologies for an elite southern university Banner implementation.

Education

- Massachusetts Institute of Technology** – Cambridge, MA August 2012-August 2017
- Ph.D., M.S. in Electrical Engineering and Computer Science, Advisor: Prof. Michael Stonebraker
 - Teaching Assistant for Database Systems Course with Prof. Samuel Madden (Undergraduate and Graduate Course)
- Yale University** – New Haven, CT August 2004-May 2008
- B.S. in Physics (honors, magna cum laude), Phi Beta Kappa, Junior Year inductee
 - Deforest Pioneers Prize for Distinguished Creative Achievement in Physics

Research Experience

- Database Management Systems Research** – MIT August 2012-August 2017
Research Assistant to Professor Michael Stonebraker
- Implemented a framework for elastically scaling database resources in response to workload variation in OLTP applications.
 - Studied multi-tenancy in the cloud and used predictive modeling to plan efficient use of computing resources.
- Computational Studies of Complex Fluids** – Yale University February 2007-May 2008
Senior Thesis with Professor Corey O'Hern
- Created Monte Carlo computer simulations to study gelation and reversibility of weakly-attractive particulate systems under shear.
- Training and Research Experiences in Nonlinear Dynamics (TREND)** – UMD, College Park May 2007-August 2007
Program Participant with Professor Wolfgang Losert
- Performed experiments and created molecular dynamics simulations to study the dynamics of granular material under localized stress.

Selected Publications

- R. Taft, I. Sharif, A. Matei, N. VanBenschoten, J. Lewis, T. Grieger, K. Niemi, A. Woods, A. Birzin, R. Poss, P. Bardea, A. Ranade, B. Darnell, B. Gruneir, J. Jaffray, L. Zhang, and P. Mattis. CockroachDB: The Resilient Geo-Distributed SQL Database. SIGMOD '20, pages 1493–1509, 2020.
- R. Taft, N. El-Sayed, M. Serafini, Y. Lu, A. Aboulmaga, M. Stonebraker, R. Mayerhofer, and F. Andrade. P-Store: An Elastic Database System with Predictive Provisioning. SIGMOD '18, pages 205-219, 2018.
- R. Taft, W. Lang, J. Duggan, A. Elmore, M. Stonebraker, and D. DeWitt. STeP: Scalable Tenant Placement for Managing Database-as-a-Service Deployments. SoCC '16, pages 388-400, 2016.
- R. Taft, E. Mansour, M. Serafini, J. Duggan, A. Elmore, A. Aboulmaga, A. Pavlo, and M. Stonebraker. E-Store: Fine-Grained Elastic Partitioning for Distributed Transaction Processing Systems. VLDB '15, pages 245-256, 2014.

Service and Other Activities

- Program Committee Member for VLDB 2018 and 2020, SIGMOD Industry 2018 and Research 2020, SoCC 2019, and ICDE 2019
- Advisory Board Member of Micronotes, a financial marketing company (August 2017-Present)
- Advisory Board Member of Ocient, a company building an exabyte-scale data management platform (March 2020-Present)
- Board Member of Horizons @ Lexington Montessori School, an educational summer program for low-income children (October 2017-October 2019)
- MIT Rowing Club (Member: 2014-October 2019, President: 2016-2017)
- Lincoln Park Boat Club (Member: October 2019-Present)