Dixin Tang dixin [at] utexas [dot] edu

Research Areas

Query Processing and Optimizations, ML/PL for DB

Employment

2024-present	Assistant Professor - University of Texas, Austin
2021-2023	Postdoctoral Scholar - University of California, Berkeley
	Advisor: Aditya G. Parameswaran, Associate Professor

Education

2015-2020	Ph.D. in Computer Science - University of Chicago
	Advisor: Aaron J. Elmore, Associate Professor
2011-2014	M.S. in Computer Science - Institute of Computing Technology, Chinese Academy of Sciences
	Advisor: Wei Li, Associate Professor
2007-2011	B.S. in Software Engineering - Huazhong University of Science & Technology

Recent Publications

P1. Visualizing Spreadsheet Formula Graphs Compactly
Fanchao Chen, **Dixin Tang**, Haotian Li, Aditya G. Parameswaran
VLDB 2023, Demo

P2. Transactional Panorama: A Conceptual Framework for User Perception in Analytical Visual Interfaces
Dixin Tang, Alan Fekete, Indranil Gupta, Aditya G. Parameswaran
VLDB 2023

P3. Efficient and Compact Spreadsheet Formula Graphs
Dixin Tang, Fanchao Chen, Christopher De Leon, Tana Wattanawaroon, Jeaseok Yun, Srinivasan Seshadri, Aditya G. Parameswaran
ICDE 2023

P4. Flexible Rule-Based Decomposition and Metadata Independence in Modin: A Parallel Dataframe System
Devin Petersohn*, **Dixin Tang***, Rehan Durrani, Areg Melik-Adamyan, Joseph E. Gonzalez, Anthony D. Joseph, Aditya G. Parameswaran
VLDB 2022 (*Equal contribution)

P5. Lux: Always-on Visualization Recommendations for Exploratory Dataframe Workflows
Doris Jung-Lin Lee, **Dixin Tang**, Kunal Agarwal, Thyne Boonmark, Caitlyn Chen, Jake Kang, Ujjaini Mukhopadhyay, Jerry Song, Micah Yong, Marti A. Hearst, Aditya G. Parameswaran
VLDB 2022

P6. Enhancing the Interactivity of Dataframe Queries by Leveraging Think Time
Doris Xin, Devin Petersohn, **Dixin Tang**, Yifan Wu, Joseph E. Gonzalez, Joseph M. Hellerstein, Anthony D. Joseph, Aditya G. Parameswaran
IEEE Data Eng. Bull. 2021

P7. Resource-Efficient Shared Query Execution via Exploiting Time Slackness
Dixin Tang, Zechao Shang, William Ma, Aaron J. Elmore, Sanjay Krishnan
SIGMOD 2021

P8. CIAO: An Optimization Framework for Client-Assisted Data Loading
Cong Ding, **Dixin Tang**, Xi Liang, Aaron J. Elmore, Sanjay Krishnan
ICDE 2021, Short Paper

P9. CrocodileDB in Action: Resource-Efficient Query Execution by Exploiting Time Slackness
Dixin Tang, Zechao Shang, Aaron J. Elmore, Sanjay Krishnan, Michael J. Franklin
VLDB 2020, Demo

P10. Thrifty Query Execution via Incrementability
Dixin Tang, Zechao Shang, Aaron J. Elmore, Sanjay Krishnan, Michael J. Franklin
SIGMOD 2020

P11. CrocodileDB: Efficient Database Execution through Intelligent Deferment
Zechao Shang, Xi Liang, **Dixin Tang**, Cong Ding, Aaron J. Elmore, Sanjay Krishnan, Michael J. Franklin
CIDR 2020

P12. Intermittent Query Processing
Dixin Tang, Zechao Shang, Aaron J. Elmore, Sanjay Krishnan, Michael J. Franklin
VLDB 2019

P13. Socrates: The New SQL Server in the Cloud
Panagiotis Antonopoulos, Alex Budovski, Cristian Diaconu, Alejandro Hernandez Saenz, Jack Hu, Hanuma Kodavalla, Donald Kossmann, Umar Farooq Minhas, Naveen Prakash, Hugh Qu, Chaitanya Sreenivas Ravella, Krystyna Reisteter, Sheetal Shroti, **Dixin Tang**, Vikram Wakade
SIGMOD 2019

P14. Toward Coordination-Free and Reconfigurable Mixed Concurrency Control
Dixin Tang, Aaron J. Elmore
USENIX'ATC 2018

P15. Adaptive Concurrency Control: Despite the Looking Glass, One Concurrency Control Does Not Fit All
Dixin Tang, Hao Jiang, Aaron J. Elmore
CIDR 2017

Professional Services

Program Committee:
SIGMOD'25, SIGMOD'24 (Demo Track), SIGMOD'23, SIGMOD'22, SIGMOD'22 (Demo Track)
EDBT'24
HILDA'23

Conference Reviewer:
IEEE VIS'21

Journal Reviewer:
VLDB Journal
Distributed and Parallel Databases Journal

Honors & Awards

2018	USENIX ATC'18 Student Travel Grant
2016	University Unrestricted (UU) Fellowship - The University of Chicago
2016	CERES 1st year Graduate Research Award - The University of Chicago

Teaching Assistants

Winter 2020	CMSC 23500 - Introduction to Database Systems

Winter 2019	CMSC 23500 - Introduction to Database Systems
Winter 2018	CMSC 23500 - Introduction to Database Systems
Winter 2017	CMSC 23500 - Introduction to Database Systems
Spring 2016	MPCS 52040 - Distributed Systems
Fall 2015	MPCS 51040 - C Programming

Industry Experience

- **Internship at Microsoft Research** June 2018-Sep. 2018
  Project: Benchmarking Socrates Mentor: Umar Farooq Minhas

  Socrates is a new cloud-native database that decouples computation from storage. My internship involved testing the new database architecture of Socrates in an industrial setting, understanding its performance bottlenecks, and proposing optimization opportunities.

Referees

Name Aditya G. Parameswaran
Affiliation University of California, Berkeley
Position Associate Professor
Contact adityagp@eecs.berkeley.edu

Name Aaron J. Elmore
Affiliation University of Chicago
Position Associate Professor
Contact aelmore@cs.uchicago.edu

Name Michael J. Franklin
Affiliation University of Chicago
Position Full Professor, Liew Family Chairman of Computer Science
Contact mjfranklin@uchicago.edu

Name Sanjay Krishnan
Affiliation University of Chicago
Position Assistant Professor
Contact skr@cs.uchicago.edu

Name Indranil Gupta
Affiliation University of Illinois Urbana-Champaign
Position Full Professor
Contact indy@illinois.edu

Name Umar Farooq Minhas
Affiliation Apple Knowledge Platform
Position Engineering Leader
Contact umarfm13@gmail.com

Name Wei Li
Affiliation Institute of Computing Technology, Chinese Academy of Sciences
Position Associate Professor
Contact liwei@ict.ac.cn