

Johes Bater

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RESEARCH INTERESTS privacy-preserving analytics, federated databases, differential privacy, private data sharing, secure computation, database performance, data science, trustworthy database systems

ACADEMIC APPOINTMENTS **Tufts University**
Assistant Professor, Computer Science 2022–present

EDUCATION **Northwestern University**
Ph.D., Computer Science 2015–2020
• Thesis: “Building a Private Data Federation: Security and Privacy Guarantees for Distributed Analytics”
• Advisor: Jennie Rogers

Stanford University
Sci.M., Electrical Engineering 2011–2013
• Program of Study: Computer Systems

 B.S., Electrical Engineering 2007–2011
• Minor: Comparative Literature

TEACHING EXPERIENCE **Tufts University**
Assistant Professor 2022–present
• CS 151-02–Privacy, Security, and Data: Fall 2022
• CS 115–Database Systems: Spring 2023

Northwestern University
Graduate Teaching Assistant 2015–2020
• EECS 339–Introduction to Database Systems: Fall 2016, Spring 2017
• MSiA 413–Introduction to Databases and Info. Retrieval: Fall 2017
• EECS 495–Data Science: Fall 2015
• CS 396–Introduction to Cryptography: Winter 2020
• Guest and weekly lectures, prepared homework assignments, and coordinated teams of peer mentors for student support and grading.

CONFERENCE PUBLICATIONS **Johes Bater**, Gregory Elliott, Craig Eggen, Satyender Goel, Abel Kho, and Jennie Rogers. SM-CQL: Secure Querying for Federated Databases. In *PVLDB*, 10(6), pages 673–684, 2017.

Johes Bater, Xi He, William Ehrich, Ashwin Machanavajjhala, and Jennie Rogers. Shrinkwrap: Efficient SQL Query Processing in Differentially Private Data Federations. In *PVLDB*, 12(3), pages 307–320, 2018.

Johes Bater, Yongjoo Park, Xi He, Xiao Wang, and Jennie Rogers. SAQE: Privacy-Preserving Approximate Query Processing for Data Federations. In *PVLDB*, 13(12), pages 2691–2705, 2020.

 Chenghong Wang, **Johes Bater**, Kartik Nayak, and Ashwin Machanavajjhala. DP-Sync: Hiding Update Patterns in Secure Outsourced Databases with Differential Privacy. In *SIGMOD*, 2021.

Priyanka Nanayakkara, **Johes Bater**, Xi He, Jessica Hullman, and Jennie Rogers. Visualizing Privacy-Utility Trade-Offs in Differentially Private Data Releases. In *PoPETs*, 2022.

Chenghong Wang, **Johes Bater**, Kartik Nayak, and Ashwin Machanavajjhala. IncShrink: Architecting Efficient Outsourced Databases using Incremental MPC and Differential Privacy. In *SIGMOD* 2022.

UNDER
SUBMISSION/
PREPARATION

Yanping Zhang, **Johes Bater**, Kartik Nayak, and Ashwin Machanavajjhala. Longshot: Indexing Growing Databases using MPC and Differential Privacy. November 2022.

WORKSHOP
PUBLICATIONS

Jennie Rogers, **Johes Bater**, Xi He, Ashwin Machanavajjhala, Madhav Suresh, Xiao Wang. Privacy Changes Everything. In *POLY Workshop at VLDB*, pages 96–111, 2019.

Johes Bater, Xi He, William Ehrich, Ashwin Machanavajjhala and Jennie Rogers. Shrinkwrap: Efficient SQL Query Processing in Differentially Private Data Federations. In *TPDP at CCS*, 2018.

Yanping Zhang, Chenghong Wang, David Pujol, **Johes Bater**, Matthew Lentz, Ashwin Machanavajjhala, Kartik Nayak, Lavanya Vasudevan, and Jun Yang. Poirot: Private Contact Summary Aggregation. In *Covid-19 Research Session at SenSys*, 2020.

Yanping Zhang, Chenghong Wang, David Pujol, **Johes Bater**, Matthew Lentz, Ashwin Machanavajjhala, Kartik Nayak, Lavanya Vasudevan, and Jun Yang. Poirot: Private Contact Summary Aggregation. In *PriML/PPML at NeurIPS*, 2020.

Xi He, Jennie Rogers, **Johes Bater**, Ashwin Machanavajjhala, Chenghong Wang, and Xiao Wang. Practical Security and Privacy for Database Systems. In *Tutorial at SIGMOD*, 2021.

Yuchao Tao, **Johes Bater**, and Ashwin Machanavajjhala. Prior-Aware Distribution Estimation for Differential Privacy. In *TPDP at ICML*, 2021.