

# Sacha Servan-Schreiber

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## Research interests and vision

My research focuses on designing and building privacy-preserving systems for networked environments. In doing so, I apply existing cryptographic primitives and develop new theoretical tools that enable better performance and security in anonymous communication, recommendation systems, and private databases. I believe that the future of the Internet depends on the development of cryptographic tools that improve user privacy and security.

## Education



**Massachusetts Institute of Technology**  
Ph.D Candidate at MIT CSAIL.  
*September 2019 - Present*



**Brown University**  
Sc.B Computer Science (with honors).  
*January 2016 - December 2018*

## Experience

### *Massachusetts Institute of Technology*

- **Meng Mentor** *Fall 2022 - Present*  
Currently mentoring one masters student working on applied cryptography research.
- **PRIMES Mentor** *January 2019 - Present*  
Currently mentor two high-school students working on graduate-level research in cryptography.
- **Teaching Assistant** *Fall 2021*  
6.875: Foundations of Cryptography; taught by Vinod Vaikuntanathan.
- **UROP Mentor** *Fall 2020 - Fall 2021*  
Co-mentored an undergraduate student working on research in cryptography and computer security.
- **Grading Assistant** *Fall 2020*  
6.875: Foundations of Cryptography (co-taught with Berkeley CS276).

### *Brown University*

- **Undergraduate Researcher** *January 2017 - March 2019*  
Worked as an undergraduate researcher in the Database Systems Lab and Visual Computing Lab.
- **Undergraduate Teaching Assistant** *Fall 2017 - Spring 2018*  
CS1230: Introduction to Computer Graphics; taught by Andy van Dam.  
CS1800: Cybersecurity and International Relations; taught by John Savage.

### *Industry*

- **Internship at MongoDB** *Summer 2016*  
Continued working with the MongoDB University team to improve their mobile platform.
- **Internship at MongoDB** *June 2015 - December 2015*  
Designed and built the MongoDB University [mobile app](#) from the ground up.

## Publications

(in reverse chronological order)

1. S. Langowski, **S. Servan-Schreiber**, S. Devadas,  
[Trellis: Robust and Scalable Metadata-private Anonymous Broadcast](#),  
*Network and Distributed System Security (NDSS) Symposium 2023*.
2. K. Hogan, **S. Servan-Schreiber**, Z. Newman, B. Weintraub, C. Nita-Rotaru, S. Devadas,  
[ShorTor: Improving Tor Network Latency via Multi-hop Overlay Routing](#),

- IEEE Symposium on Security and Privacy (Oakland) 2022.
3. **S. Servan-Schreiber**, S. Langowski, S. Devadas,  
[Private Approximate Nearest Neighbor Search with Sublinear Communication](#),  
IEEE Symposium on Security and Privacy (Oakland) 2022.
  4. Z. Newman, **S. Servan-Schreiber**, S. Devadas,  
[Spectrum: High-Bandwidth Anonymous Broadcast](#),  
USENIX Symposium on Networked Systems Design and Implementation (NSDI) 2022.
  5. T. Kraska, M. Stonebraker, M. Brodie, S. **Servan-Schreiber**, D. Weitzner,  
[SchengenDB: A Data Protection Database Proposal](#),  
Poly'19 workshop co-located with VLDB 2019.
  6. **S. Servan-Schreiber**, M. Riondato, and E. Zraggen,  
[ProSecCo: Progressive Sequence Mining with Convergence Guarantees](#),  
Knowledge and Information Systems Journal 2019.
  7. **S. Servan-Schreiber**, M. Riondato, E. Zraggen,  
[ProSecCo: Progressive Sequence Mining with Convergence Guarantees](#),  
IEEE International Conference on Data Mining 2018.  
**Best Student Paper Award runner-up.**
  8. Y. Chung, **S. Servan-Schreiber**, E. Zraggen, T. Kraska,  
*Towards Quantifying Uncertainty in Data Analysis & Exploration*,  
IEEE Data Engineering Bulletin 2018.

## Invited talks

1. Private Approximate Nearest Neighbor Search with Sublinear Communication,  
*Berkeley University, February 18th 2022.*
2. AdVeil: A Private Targeted Advertising Ecosystem,  
*Cornell University, September 21st 2021.*
3. AdVeil: A Private Targeted Advertising Ecosystem,  
*Brave Research, September 15th 2021.*
4. AdVeil: A Private Targeted Advertising Ecosystem,  
*Northeastern University, September 1st 2021.*
5. *Spectrum: High-bandwidth anonymous Broadcast*,  
*Cornell University, March 11th 2021.*
6. *Spectrum: High-bandwidth anonymous Broadcast*,  
*Northeastern University, July 7th 2021.*

## Academic services

### Reviewer

- ACM Transactions on Privacy and Security (TPS) 2022.

### Subreviewer

- IEEE Security and Privacy (Oakland) 2023
- ACM Conference on Computer and Communications Security (CCS) 2021.
- Annual International Cryptology Conference (Crypto) 2020.

## Awards

- William A. Martin Master's Thesis Award in Computer Science.
- Jacobs Foundation Research Fellowship.
- Best Student Paper Runner-up.