

# Amine Bahi

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## Education

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| <b>École normale supérieure</b>   PhD in Cryptography<br><i>Paris, France</i><br>ORAM and Structured Encryption<br>Advisors: Brice Minaud and Tarik Moataz<br>Cascade Cryptography Group | 2024-2027 |
| <b>Mohammadia School of Engineers</b><br>MS in Computer Science<br><i>Rabat, Morocco</i>                                                                                                 | 2016-2019 |
| <b>CPGE</b>   Classes Préparatoires aux Grandes Écoles<br><i>Rabat, Morocco</i><br>Preparatory Classes                                                                                   | 2014-2016 |

## Research Experience

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| <b>Northeastern University</b>   Research Intern<br><i>Boston, USA</i> <ul style="list-style-type: none"><li>Designed and implemented a low-latency encrypted multi-map (EMM) in C++ with low leakage and subliminal modes; integrated Path ORAM and queueing-theoretic techniques.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                      | 2023-2024       |
| <b>UM6P College of Computing</b>   Doctoral Researcher<br><i>Marrakesh, Morocco</i> <ul style="list-style-type: none"><li>Researched searchable symmetric encryption (SSE), structured encryption, and multi-server volume-hiding EMM constructions; evaluated efficiency/leakage trade-offs empirically.</li><li>Implemented and benchmarked the volume-hiding SSE schemes in the research evaluation suite by extending the Clusion encrypted-search framework.</li><li>Studied SSE workload/leakage statistics, Zipf-like keyword distributions, and links to equity-market microstructure; investigated prophet inequalities and secretary-problem optimal stopping.</li></ul> | 2020-2023       |
| <b>Inria</b>   Research Intern<br><i>Lyon, France</i> <ul style="list-style-type: none"><li>Integrated TFHE into an IoT healthcare activity-recognition system; implemented encrypted-inference circuits and optimized them through benchmarking.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                        | 03/2019-06/2019 |

## Skills and Languages

**Programming:** C++, Python, Java, VBA

**Cryptography:** SSE, structured encryption, encrypted multi-maps, ORAM / Path ORAM, TFHE, homomorphic encryption

**Research:** Clusion, cryptographic prototyping, benchmarking, leakage/performance analysis, probability, optimal stopping

**Languages:** Arabic, French, English

## Selected Publications

### On the Costs of Multi-Server Volume-Hiding

Amine Bahi, Marilyn George, Seny Kamara, Tarik Moataz.  
*SCN 2026.*

### Resizable Oblivious RAM

Amine Bahi, Brice Minaud, Tarik Moataz.  
*EUROCRYPT 2026.*

### Tigro: Trust Infrastructure for Grassroots Organizing via Grounded Digital Annotations

Leah Namisa Rosenbloom, Seny Kamara, Zachary Espiritu, Tarik Moataz, Amine Bahi, John Wilkinson.  
*PETS 2026.*

### Subliminal Encrypted Multi-Maps and Black-Box Leakage Absorption

Amine Bahi, Seny Kamara, Tarik Moataz, Guevara Noubir.  
*IACR ePrint, 2024.*

### Privacy-preserving IoT Framework for Activity Recognition in Personal Healthcare Monitoring

Théo Jourdan, Antoine Boutet, Amine Bahi, Carole Frindel.  
*ACM Trans. Comput. Healthcare, 2021.*

## Talks and Posters

### Resizable Oblivious RAM

EUROCRYPT, Rome, Italy, May 2026. Conference presentation.

### On the Costs of Multi-Server Volume-Hiding

SCN, Amalfi, Italy, September 2026. Conference presentation.

### Structured encryption

UM6P Doctoral Day 2022, Benguerir, Morocco. Presentation and poster.

### Resizable Oblivious RAM

Invited Speaker, MongoDB Encrypted Search Seminar.

## Applied R&D and Engineering Experience

**Digiflow** | Software Engineering Intern

07/2018-09/2018

*Casablanca, Morocco (Remote)*

- Developed enterprise workflows with AgilePoint, including expense-report processes and AI-based process routing.

**Siprof S.A** | Software Engineering Intern

06/2017-07/2017

*Berrchid, Morocco*

- Built VBA tools for production-defect monitoring and asset management; designed supporting databases and visualizations.