

Marc DAMIE

Ph.D. Student in Privacy-Preserving Machine Learning

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🎓 Education

Ph.D. in Computer Science (*under preparation*)

Université de Lille

Lille, France

Apr. 2022 - now

Subject: Secure protocols for verifiable decentralized machine learning. *Supervisors:* Dr. Jan Ramon (Inria Lille, France), Prof. Andreas Peter (University of Oldenburg, Germany), and Dr. Florian Hahn (University of Twente, The Netherlands).

Master's Degree in Computer Science (i.e., "Diplôme d'ingénieur")

Université de Technologie de Compiègne (UTC) - Alliance Sorbonne Université

Compiègne, France

Sep. 2016 - Aug. 2022

Major: Data Mining and Engineering. *Minors:* Philosophy, Technology and Cognition; Communication and Technological Controversies; Mathematical Modelling. *GPA:* 5/5.

French Scientific "Baccalauréat"

Lycée Fénelon

Vaujours, France

Sep. 2013 - Jul. 2016

🏢 Employment History

University of Twente

Researcher contract

End of the Ph.D. thesis preparation in the SCS group.

Enschede, The Netherlands

October 2023 - September 2025

Inria

Doctoral contract

Ph.D. thesis preparation in the MAGNET team.

Villeneuve d'Ascq, France

April 2022 - September 2023

Inria

Research engineer in the MAGNET team

Development for the open-source library Tailed. Conception of a PhD topic.

Villeneuve d'Ascq, France

October 2021 - April 2022

Inria

Research engineering internship in the MAGNET team

Poof of Concept for a decentralized secure privacy-preserving surveying for mobile devices. Development and technology watch for the open-source library Tailed (which goal is to simplify access to trustworthy Federated Learning).

Villeneuve d'Ascq, France

Feb. 2021 - Jul. 2021

University of Twente

Research intern in the Services, Cybersecurity and Safety group

Conception of new attacks against Searchable Encryption. Supervised by Andreas Peter and Florian Hahn.

Enschede, The Netherlands

Feb. 2020 - Jul. 2020

Gatewatcher

Back-end intern on the intrusion detection system Trackwatch

Tasks: Back-End (Python), Continuous Integration (Gitlab/Docker), Data Engineering (Elasticsearch, Logstash, Redis).

Paris, France

Aug. 2019 - Feb. 2020

Freelance

MOOC-like content for a programming training

Open-source modules (e.g., Introduction to security, Introduction to GDPR).

Remote, France

2020

🏆 Awards and Honors

May 2022

Nomination (i.e., top 3) for the Dutch cybersecurity research paper for Damie et al. (USENIX 2021)

Publications

- [1] **M. Damie**, F. Hahn, and A. Peter, "A Highly Accurate Query-Recovery Attack against Searchable Encryption using Non-Indexed Documents", USENIX Security 2021
- [2] M. Dijkslag, **M. Damie**, F. Hahn, and A. Peter, "Passive query-recovery attack against secure conjunctive keyword search schemes", ACNS 2022
- [3] **M. Damie**, J-B. Leger, F. Hahn, and A. Peter, "The statistical nature of leakage in SSE schemes and its role in passive attacks", [Under review] 2023
- [4] **M. Damie**, F. Hahn, J. Ramon and A. Peter, "Secure Sparse Matrix Multiplications and their applications to Privacy-Preserving Machine Learning", [Under review] 2023
- [5] **M. Damie**, F. Hahn, J. Ramon and A. Peter, "How to securely shuffle? A survey about secure shufflers in Federated Learning", [To be submitted] 2023

Volunteer Services

Rhizome (non-profit Internet Service Provider)

Member/Treasurer

Rhizome is a non-profit ISP providing events (like Imaginarium Festival) and subscribers with internet access. Promotion of **open-source and free-culture** movement.

Compiègne, France

2018 - 2022

Université de Technologie de Compiègne

Student Representative in the Board of Directors

Compiègne, France

2017 - 2021

Université de Technologie de Compiègne

Student Representative in the Humanities Department

Compiègne, France

2017 - 2019

Université de Technologie de Compiègne

Student Representative in the Computer Science Department

Compiègne, France

2018 - 2019

TEDxUTCompiègne

Communication and Partnerships Manager

Compiègne, France

2017 - 2018

Skills

Programming Python, C/C++, JavaScript, Rust, R

Admin. Sys. Docker, Bash, PostgreSQL, Bind9, NGINX

Database SQL, Elasticsearch, Redis, Scylla

Language French (Native), English (Professional), Spanish (Intermediate), Russian (Notions), Chinese (Notions)

References

- Prof. *Andreas Peter*
University of Oldenburg, Germany ✉ andreas.peter@uni-oldenburg.de
- Dr. *Jean-Benoist Leger*
University de Technologie de Compiègne, France. ✉ jbleger@hds.utc.fr