# Mohamed Maouche, PhD.

## Researcher – Data Science – Privacy


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## Work experience

November 2019 – ongoing

Inria, Lille, France.

### *Post-doc*

On private machine learning for speech processing and anonymization in the Magnet Team.

October 2016 – October 2019

INSA-Lyon LIRIS Lab, France.

### *PhD Student*

In the fields of Data Science, Security and Privacy. Working on Location Privacy. And more precisely on re-identification attacks and obfuscation techniques

October 2016 – August 2019

INSA-Lyon, France

***Teacher*** Teaches computer science in the first cycle department (Dept PC) and in the computer science department of INSA-Lyon (Dept. IF).

January 2016 – June 2016

UTC - Heudyasic Lab, France

### *Research Intern*

In the field of Optimization in Operations research. Working on the Vehicle Routing Problem (VRP).

## Teachings

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|---|---|
| Dimensions Reduction | PCA, TSNE, Autoencoders |
| Computer Science | Algorithmic, OOP |
| Operating Systems | C, Concurrency, Memory |
| Web data | XML, XPath, MongoDB |
| Semantic Web | RDF, SPARQL |
| Human Computer Interaction | Android Project |

## Review

Review for IEEE TDSC 20, MobiQuitous 20, ACM IMWUT 2019 journal and subreviewer for conferences: SRDS 18, Euro-Par 18, ICDCS 18, Shadow PC Eurosys 18.

## Education

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|---|---|
| 2016 –2019 | **PhD in Computer Science**<br>*INSA-Lyon, France.* |
| 2011 –2016 | **Engineer/Master degree In Computer Science**<br>*Ecole Nationale Superieure d'Informatique - ESI, Algiers* |
| 2008 – 2011 | **Baccalaureat in Mathematics**<br>High school diploma<br>*Bouamama High school, Algiers* |

## Supervisions

Besma Khalfoun – Master Student from ESI

Jugurta Ikherbane – Master Student from ESI

Dorian Lefeuvre – 3rd year Ph.D. Track Student project from INSA-Lyon

## Languages

| | |
|---|---|
| French | Native speaker |
| Arabic | Native speaker |
| English | Oral: Good – Written: Good |

## </> Programming skills

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|---|---|
| Good level | Python, scikit-learn, scipy, keras, Java, Scala, C++, C, git, Linux, MongoDB, XML |
| Intermediate | HTML, XSL, JavaScript, LaTeX, R, MySQL, IOS (Cisco), UML, Android |

## Responsibilities

Co-webmaster and member of the local organization committee of IEEE SRDS 2019 `www.srds-conference.org`.

Server administrator of DRIM Reasearch Team (2018-2019).

Manager of DRIM's twitter account (2017-2019).

## Publications Summary

### International Journals (1)

[1] M. Maouche, S. Ben Mokhtar, S. Bouchenak: HMC: Robust Privacy Protection of Mobility Data against Multiple Re-Identification Attacks. IMWUT 2(3): 124:1-124:25 (2018) / Ubicomp 2018 https://hal.archives-ouvertes.fr/hal-01954041

### International Conferences (5)

[2] M. Maouche, B. Srivastava, N. Vauquier, A. Bellet, M. Tommasi, E. Vincent. A comparative study of speech anonymization metrics. INTERSPEECH 2020. https://hal.inria.fr/hal-02907918/document

[3] B. Srivastava, N. Tomashenko, X. Wang, E. Vincent, J. Yamagishi, M. Maouche, A. Bellet, M. Tommasi. Design Choices for X-vector Based Speaker Anonymization . INTERSPEECH 2020. https://hal.archives-ouvertes.fr/hal-02610447v2/document

[4] B. Khalfoun, M. Maouche, S. Ben Mokhtar, S. Bouchenak: MooD: MObility Data Privacy as Orphan Disease. Middleware 2019. https://hal.archives-ouvertes.fr/hal-02355325/document

[5] V. Primault, M. Maouche, A. Boutet, S. Ben Mokhtar, S. Bouchenak, L. Brunie: ACCIO: How to Make Location Privacy Experimentation Open and Easy. ICDCS 2018. https://hal.archives-ouvertes.fr/hal-01784557

[6] M. Maouche, S. Ben Mokhtar, S. Bouchenak: AP-Attack: A Novel User Re-identification Attack On Mobility Datasets. MobiQuitous 2017. https://hal.archives-ouvertes.fr/hal-01785155

### French National Conferences (6)

Those conferences have peer reviews but no proceedings.

[7] M. Maouche, S. Ben Mokhtar, S. Bouchenak. Attaques de ré-identification des utilisateurs à partir de leurs traces de mobilité. Compas 2017.

[8] M. Maouche, S. Ben Mokhtar, S. Bouchenak. HMC : Préservation de la vie privée des utilisateurs sur les données de mobilité par la protection contre les attaques de ré-identification. Compas 2018

[9] J. Ikherbane, M. Maouche, S. Ben Mokhtar, S. Bouchenak. Calcul multipartite sécurisé basé sur un environnement d'exécution sécurisée. Compas 2018

[10] M. Maouche, S. Ben Mokhtar, S. Bouchenak. SFERA: Assessing Location Privacy with Re-Identification Attacks. APVP 2017

[11] V. Primault, M. Maouche, A. Boutet, S. Ben Mokhtar, S. Bouchenak, L. Brunie. How to Make Privacy Experimentation Open and Easy?. APVP 2018

[12] B. Khalfoun, M. Maouche, S. Ben Mokhtar, S. Bouchenak: MooD: MObility Data Privacy as Orphan Disease. Compas 2019

## Software Development

[13] Anonymization Metrics: This toolkit encapsulates multiple python implementations of anonymization metrics. https://gitlab.inria.fr/magnet/anonymization_metrics

[14] SFERA: A toolkit to experiment on re-identification attacks on mobility traces https://github.com/mmaouche-insa/SFERA

[15] HMC: A toolkit to test the Location Privacy Protection Mechanism HMC (Heat-Map Confusion) https://github.com/mmaouche-insa/HMC

[16] Participation in Accio (main contributer is Vincent Primault: A scientific workflow management tool, used to study location privacy https://privamov.github.io/accio/