

# MIA FILIĆ

Doctorate student,

ETH Zürich,

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## EDUCATION

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### DOCTORATE STUDENT • APPLIED CRYPTOGRAPHY GROUP, ETH ZÜRICH • 09.2019 – PRESENT (ANTICIPATED GRADUATION DATE 10/2024)

Research focus: (i) probabilistic data structures under adversaries, funded by [Microsoft Swiss Joint Research Center](#), (ii) prime number generation and testing

BSc and MSc thesis mentor: Jonas Hoffman, Daniel Patrick Frey, Filip Dobrosavljević, Philipp Engljähringer, Ella Kummer;

Teaching assistant: Linear algebra, Applied Cryptography (coordinator);

### MASTER OF COMPUTER SCIENCE AND MATHEMATICS • UNIVERSITY OF ZAGREB • 09.2015 – 09.2017

Master thesis: Analysis of the position estimation procedure based on given GNSS pseudoranges in a GNSS SDR receiver;

Semester abroad: University of Ljubljana, Slovenia

Prizes: 2019 URSI AP-RASC Student Paper Competition Award, 2018 URSI Young Researcher Award

### BACHELOR OF MATHEMATICS • UNIVERSITY OF ZAGREB • 09.2012 – 09.2015

Mathematics, Computer Science

Prizes: Sandoz Scholarship for Undergraduate Students

## RECENT PUBLICATIONS

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### Adversarial Correctness and Privacy for Probabilistic Data Structures

M. Filić, K. G. Paterson, A. Unnikrishnan, F. Virdia CCS 2022

### Compact Frequency Estimators in Adversarial Environments

S. A. Markleon, M. Filić, T. Shrimpton CCS 2023 (to appear)

## TALKS

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Understanding the Security of Probabilistic Data Structures under Adversarial Conditions • 29.03.2022 • Swiss Joint Research Center Workshop 2022, Lausanne, Switzerland

Adversarial Correctness and Privacy for Probabilistic Data Structures • 04.11.2022 Stanford Security Seminar (jointly with A. Unnikrishnan)

Adversarial Correctness and Privacy for Probabilistic Data Structures • 09.11.2022 ACM Conference on Computer and Communications Security, 07.-11.11.2022, Los Angeles, U.S.A.

## EXPERIENCE

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### RESEARCH VISIT • UNIVERSITY OF FLORIDA • 09.2022 – 01.2023

Independent and collaborative research in the area of secure probabilistic data structures: (i) exploration of new security notions, (ii) analysis of the security properties of existing data structures, and (iii) development of new structures that remain compact while providing better overall security guarantees. Collaborators: Dr. Thomas Shrimpton, Sam A. Markelon

**INDEPENDENT RESEARCHER • 08.2016 – 09.2019**

Project leader and participant in projects on: (i) analysis and extension of existing position estimation methods; (ii) mathematical methods for anomaly detection in weather-related degradation of GNSS positioning performance, and GNSS spoofing

**TEACHING ASSISTANT • UNIVERSITY OF LJUBLJANA, SLOVENIA • 10.2018 – 08.2019**

Research focus: Cryptography; TA for Web programming, Algorithms, Software engineering

**RESEARCHER • UNIVERSITY OF ZAGREB, CROATIA • 03.2018 – 09.2018**

Design of self-managing system for corn cultivation (Python)

**SOFTWARE DEVELOPER • ARMONE (START-UP), CROATIA • 07.2017 – 03.2018**

Design and implementation of communication process between robotic arm and raspberry pi (C/C++)

**LECTURER • UNIVERSITY OF RIJEKA, CROATIA • 09.2017 – 02.2018**

Research focus: Location Intelligence; Co-lecturer and TA for Location Intelligence/Location-Based Services course; Co-advisor for seminars and MSc thesis

**STUDENT ASSISTANT • ERICSSON NIKOLA TESLA, CROATIA • 07.2016 - 09.2016**

Spatial data analysis and modelling (R); Software development

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**SUMMER SCHOOLS**

RWC Summer School on real-world crypto and privacy 2023, Vodice, Croatia.

IACR Summer School in Post-Quantum Cryptography 2022, Budapest, Hungary.

IACR-CROSSING School on Combinatorial Techniques in Cryptography, 2022, Valletta, Malta.

RWC Summer School on real-world crypto and privacy 2019, Šibenik, Croatia.

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**OTHER****LANGUAGES**

English (fluent), Croatian (native), German (intermediate)

**SELECTED PUBLICATIONS PRIOR TO 2019 (NON-CRYPTO AND -SECURITY)**

Anatomy of Origin-Destination Matrix derived from GNSS alternatives, R. Filjar, M. Filić, A. Lucić, K. Vidović, D. Šarić, Coordinates Oct 2018.

Modelling the Connection between GNSS Positioning Performance Degradation, and Space Weather and Ionospheric Conditions using RReliefF Features Selection, M. Filić, R. Filjar, ION GNSS+ 2018.

On development of the forecasting model of GNSS positioning performance degradation due to space weather and ionospheric conditions, M. Filić, URSI AT-RASC 2018.

For a complete list of publications check [Google Scholar](#).

**SUB-REVIEWER**

CT-RSA 2020, CRYPTO 2020, CRYPTO 2020.

**CODING**

Python, R, C, Java, Javascript