MIA FILIĆ

Doctorate student

@ **mfilic@ethz.ch**   @ **filicmia@gmail.com**   📍 **Zürich, Switzerland**

EDUCATION

Doctorate student

Applied cryptography group, ETH Zürich

📅 Sep 2019 – present (anticipated graduation date Oct 2024)   📍 Zürich, Switzerland

- 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: Daniel Patrick Frey, Filip Dobrosavljević, Philipp Engljähringer, Ella Kummer, Jonas Hoffman
- Teaching assistant: Linear algebra, Applied cryptography (coordinator)

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Master of computer science and mathematics

University of Zagreb

📅 Sep 2015 – Sep 2017   📍 Zagreb, Croatia

- Master thesis: Analysis of the position estimation procedure based on given GNSS pseudoranges in a GNSS SDR receiver; Courses including Java course at FER
- Semester abroad: University of Ljubljana, Slovenia
- Prizes: 2019 URSI AP-RASC Student paper competition award, 2018 URSI Young researcher award, Sandoz Croatia scholarship for master's studies

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Bachelor of mathematics

University of Zagreb

📅 Sep 2012 – Sep 2015   📍 Zagreb, Croatia

- Prizes: Sandoz Croatia scholarship for undergraduate studies

RECENT PUBLICATIONS

Adversarial Correctness and Privacy for Probabilistic Data Structures

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

📅 Nov 2022   📍 ACM CCS 2022

Compact Frequency Estimators in Adversarial Enviroments

S. A. Markleon, M. Filić, T. Shrimpton

📅 Nov 2023   📍 ACM CCS 2023

TALKS

Understanding the Security of Probabilistic Data Structures under Adversarial Conditions

Mia Filić

📅 Mar 29th 2022   📍 Swiss Joint Research Center Workshop 2022

Adversarial Correctness and Privacy for Probabilistic Data Structures

Mia Filić, Anu Unnikrishnan

📅 Nov 4th 2022   📍 Stanford Security Seminar

Adversarial Correctness and Privacy for Probabilistic Data Structures

Mia Filić

📅 Nov 9th 2022   📍 ACM CCS 2022

EXPERIENCE

Research visit

Department of Computer and Information Science and Engineering, University of Florida

📅 Sep 2022 – Jan 2023   📍 Gainesville, FL, USA

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

Remote

📅 Aug 2016 – Sep 2019   📍 Remote

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

📅 Oct 2018 – Aug 2019   📍 Ljubljana, Slovenia

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

Researcher
University of Zagreb

📅 Mar 2018 – Sep 2018   📍 Zagreb, Croatia

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

Software developer
Armone (start-up)

📅 Jul 2017 – Mar 2018   📍 Zagreb, Croatia

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

External lecturer
University of Rijeka

📅 Sep 2017 – Feb 2018   📍 Rijeka, Croatia

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

📅 Jul 2016 – Sep 2016   📍 Zagreb, Croatia

Spatial data analysis and modelling (R); Software development

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

OTHER

- Languages: English (fluent), Croatian (native), German (intermediate)
- Selected publications prior 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