

MIA FILIĆ

DOCTORATE STUDENT,
ETH ZÜRICH,
EMAIL:
FILICMIA@GMAIL.COM
MFILIC@ETHZ.CH

TEACHING

Teaching assistant,
ETH Zurich, 2019-
present

Linear algebra, Applied
Cryptography
(coordination)

SUPERVISION

Semester projects, BSc
and MSc thesis

supervision, ETH
Zurich, 2019-present

INFK, ETH Zurich, 2021-
present

Jonas Hoffman, Daniel
Patrick Frey, Filip
Dobrosavljevic, Philipp
Engljähringer, Ella
Kummer

LEADERSHIP

ROLES

Applied Cryptography
course coordinator, D-
INFK, ETH Zurich, 2021-
present

IT coordinator, D-INFK,
ETH Zurich, Applied
Cryptography group,
2019-2020

Co-lead developer,
online educational tools
(Javascript/HTML),
University of Ljubljana,
Slovenia, 2018-2019

SKILLS

Coding

Python, R, C, Java,
Javascript

EDUCATION

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 on topics including Counting Bloom Filters and CRLite;

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

Adversarial Correctness and Privacy for Probabilistic Data Structures

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

EXPERIENCE

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

Languages

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

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

TALKS

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.

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

Sub-reviewer

CT-RSA 2020, CRYPTO 2020, CRYPTO 2020.

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.

Note: Other publications can be found on [Google Scholar](#).