MIA FILIĆ
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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: 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

Adversarial Correctness and Privacy for Probabilistic Data Structures
M. Filić, K. G. Paterson, A. Unnikrishnan, F. Virdia CCS 2022

Compact Frequency Estimators in Adversarial Enviroments
S. A. Markleon, M. Filić, T. Shrimpton CCS 2023 (to appear)

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.

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

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

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 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