

Gizem Akman

DOCTORAL RESEARCHER

Exactum, Pietari Kalmin katu 5, 00560, Helsinki, Finland

✉ gizem.akman@helsinki.fi | 🏠 gizem-akman.info | 📧 gizem-akman | 🌐 gakman | 🎓 Gizem Akman

Education

University of Helsinki

PH.D. IN COMPUTER SCIENCE

- Thesis: Security and Privacy for Massive Machine Type Communication (mMTC) in 5G Networks
- Supervisor: Valtteri Niemi, Secure Systems Group

Helsinki, Finland

May 2019 – Exp. 2023

University of Turku

MSC. IN INFORMATION SECURITY AND CRYPTOGRAPHY

- Thesis: Proving Identity Privacy in 5G Networks by Using Pseudonyms
- Major: Cryptography and Data Security, Minor: Networked Systems Security
- Graduated in 1st place in the department

Turku, Finland

Sep. 2015 – Jun. 2018

Bilkent University

BSC. IN MATHEMATICS

- Graduated in 3rd place in the department
- Qualified for a Comprehensive Scholarship based on the university entrance exam result
- Erasmus in Stockholm University (2014), Mathematics

Ankara, Turkey

Sep. 2009 – Jun. 2015

Experience

University of Helsinki, Secure Systems Group (Prof. Valtteri Niemi)

RESEARCHER ASSISTANT

- Researched on 5G authentication and communication protocols
- Designed a primary authentication protocol for 5G by using pseudonyms
- Implemented a demo of the designed protocol in Java

Helsinki, Finland

Jul. 2016 - Aug. 2016

Skills

Security	Protocol design, ProVerif, Tamarin prover
Programming	Java, Python
Languages	English (professional C1), Turkish (native), Finnish (B1), Dutch (B2), Spanish (reading), German (A2)

Publications

Privacy-Enhanced AKMA for Multi-Access Edge Computing Mobility (Gizem Akman, Philip Ginzboorg, Mohamed Taoufiq Damir, Valtteri Niemi)

JOURNAL ARTICLE

- <https://doi.org/10.3390/computers12010002>

Computers

2022

Lightweight Privacy-Preserving Ride-Sharing Protocols for Autonomous Cars (Sara Ramezani, Gizem Akman, Mohamed Taoufiq Damir, Valtteri Niemi)

CONFERENCE PAPER

- <https://doi.org/10.1145/3568160.3570234>

Proceedings of the 6th ACM
Computer Science in Cars
Symposium - CSCS 2022

2022

AKMA for Secure Multi-access Edge Computing Mobility in 5G (Gizem Akman, Philip Ginzboorg, Valtteri Niemi)

CONFERENCE PAPER

- https://doi.org/10.1007/978-3-031-10542-5_30

Computational Science and Its
Applications – ICCSA 2022
Workshops

2022

Privacy-Aware Access Protocols for MEC Applications in 5G (Gizem Akman, Philip Ginzboorg, Valtteri Niemi)

JOURNAL ARTICLE

- <https://doi.org/10.3390/network2020014>

Network

2022

Privacy-Preserving Access for Multi-Access Edge Computing (MEC) Applications (Gizem Akman, Philip Ginzboorg, Valtteri Niemi)

CONFERENCE PAPER

- https://doi.org/10.1007/978-3-030-87010-2_4

Computational Science and Its Applications – ICCSA 2021

2021

AKMA Support in Multi SIM User Equipment (Gizem Akman, Philip Ginzboorg, Valtteri Niemi)

CONFERENCE PAPER

- <https://doi.org/10.23919/fruct48121.2019.8981494>

Proceedings of the 25th Conference of Open Innovations Association FRUCT, Helsinki, Finland

2019

Presentation

ICCSA 2022 - 22nd International Conference on Computational Science and Its Applications

Malaga, Spain

PRESENTER FOR <AKMA FOR SECURE MULTI-ACCESS EDGE COMPUTING MOBILITY IN 5G>

Jul. 2022

- Presented a solution to provide secure and privacy-preserving access to the MEC application when the user is mobile.
- Used AKMA services of 5G for the solution.

ICCSA 2021 - 21st International Conference on Computational Science and Its Applications

Cagliari, Italy

PRESENTER FOR <PRIVACY-PRESERVING ACCESS FOR MULTI-ACCESS EDGE COMPUTING (MEC) APPLICATIONS>

Sep. 2021

- Presented a solution that provides privacy-preserving access for a user to the MEC application in the mobile operator.

FRUCT 2019 - 25th Conference of Open Innovations Association

Helsinki, Finland

PRESENTER FOR <AKMA SUPPORT IN MULTI SIM USER EQUIPMENT>

Nov. 2019

- Presented a solution that would provide a secure and continuous connection for using AKMA in Multi-SIM and eUICC devices.

Extracurricular Activity

ICCSA 2022 - The 22nd International Conference on Computational Science and Its Applications

Malaga, Spain

MEMBER OF ORGANIZING COMMITTEE

29 Jun 2022 – 8 Jul 2022

- Arranged the conference premises and designed the badges for the participants.
- Had a part in the conference sessions as a technical assistant.
- Helped with the registration and guided people around the conference premises.

FRUCT 2019 - 25th Conference of Open Innovations Association

Helsinki, Finland

MEMBER OF ORGANIZING COMMITTEE

5 Nov 2019 – 8 Nov 2019

- Helped with the registration and guided people around the conference premises.

Forró Abraço Nordestino (Brazilian Dance Association)

Helsinki, Finland

BOARD MEMBER (COMMUNICATION & PR)

Jan 2020 – PRESENT

- Designed media for publishing.
- Prepared social media announcements, including Facebook and Instagram posts and webpage updates.

BilMathS (Bilkent Mathematical Society)

Ankara, Turkey

COFOUNDER & BOARD MEMBER (COMMUNICATION & PR)

Sep 2012 – Jun 2015

- Had a part in founding the university club with fellow students during my Bachelor's studies.
- Prepared Facebook announcements, informed the club members, and invited new people.
- Organized scientific talks and meetings.