Nureddin Kamadan

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Education

University of Oxford — Oxford, United Kingdom
Doctor of Philosophy (Ph.D.) Computer Science — *Oct. 2025 - Ongoing*

Georgia Institute of Technology — Atlanta, GA, United States
Master of Science (M.Sc.) Computer Science — *Aug. 2022 - May 2025*

Sabanci University — Istanbul, Turkey
Bachelor of Science (B.Sc.) Computer Science and Engineering — *Sep 2018 - Jun 2022*

Publications

* denotes equal contribution

Conference Proceedings

- **N. Kamadan**, W. Wang, S. van Schaik, C. Garman, D. Genkin, Y. Yarom.
  ECC.fail: Mounting Rowhammer Attacks on DDR4 Servers with ECC Memory
  USENIX Security Symposium, 2025.
- **N. Kamadan***, F. Durmaz*, M.T. Oz*, M.S. Unal*, A. Javeed, C. Yilmaz, E. Savas.
  TimeInspector: A Static Analysis Approach for Detecting Timing Attacks
  IEEE European Symposium on Security and Privacy (EuroS&P) 2023 SILM Workshop.

Experience

Hardware Security Lab — Aug 2022 – present
Graduate Research Assistant; Advisor: Prof. Daniel Genkin — *Atlanta, GA*

- Published at USENIX Security Symposium 2025, known as ECC.fail
- Reverse engineered memory controller error correcting code (ECC) implementation and exploited server systems with Rowhammer attacks.
- Hands-on research experience in memory subsytems, memory RAS features, memory controllers, DRAM internals, Linux kernel drivers, BIOS/UEFI Firmware, logic analyzers, Machine Check Architecture (MCA) and ECC implementations.
- My research primarily targets the security and integrity of DRAM, with a particular emphasis on the implementation and effectiveness of Error Correcting Code (ECC) within DRAM systems. Currently, my efforts are dedicated to advancing the security and reliability of server memory subsystems.

Cryptography and Information Security Group (CISEC) — Aug 2021 – Aug 2022
Undergraduate Researcher; Advisors: Prof. Erkay Savas, Prof. Cemal Yilmaz — *Istanbul, Turkey*

- Developed a generic static analysis approach for detecting timing-based side channel attacks
- The work is published in IEEE European Symposium on Security and Privacy SILM Workshop (EuroS&PW 2023)

MilSOFT — Nov 2021 – Apr 2022
Software Engineer — *Istanbul, Turkey*

- Milsoft is a CMMI-5 certified defense industry company.
- Took part in implementing and testing various components of MANET protocol stack in C++.

Scientific and Technological Research Council of Turkey (TUBITAK) — Feb 2021 – Sep 2021
Star Scholar Research Intern — *Istanbul, Turkey*

- Worked in the GIS - Real-Time Operating System project, currently used in TAI TF KAAN
- Analyzed worst case execution time of TLSF dynamic memory allocator which is designed to be used in real-time embedded systems.
- Integrated gcov runtime library which is part of gcc's toolchain to various embedded targets i.e PowerPC, ARM. Compiled fully-functioning cross compilers for various target architectures.

Awards

Gold Medal — Among participants from 83 countries
Genius Olympiad (State University of New York at Oswego) — *Jun 2016*

Europe Finalist — Google
Google Science Fair — *Aug 2016*

Silver Medal — Bayer
Bayer Project Olympiad — *Feb 2016*

Bronze Medal — Portugal
International Ligth Year Science Olympiad — *Apr 2015*

Bronze Medal — Third best project in Asia region
TUBITAK — *Feb 2015*

Skills

Related Courses: Advanced Operating Systems, Advanced Computer Architecture, Reliability and Security in Computer Architecture, Applied Cryptography, GPU Hardware and Software, Drone Security, Network Security
Reverse Engineering: Radare2, Hopper Disassembler
Programming Languages: C/C++, Java, Python

Teaching

Teaching Assistant — Sep 2021 – March 2022
Operating Systems - CS307 — *Istanbul, Turkey*

- I held weekly office hours to assist students with their homeworks and operating systems related questions
- I conducted recitation hours to explain the material covered in the lectures

Hobby Projects

AUTOMED | *Android Studio, Arduino* — Feb 2021 – Aug 2021

- I developed a hardware-integrated mobile application for polypharmacy patients and individuals with Alzheimer's, helping them manage their medication schedules. The system prevents overdoses and sends notifications to family members if a dose is missed.

Self-Health | *Android Studio, Arduino* — May 2020 – Feb 2021

- I developed a telehealth system that allows patients to communicate with doctors remotely and transmits data (such as blood pressure and temperature) obtained from project-provided sensors to the doctor for diagnosis.

Braille-Read | *Android Studio, Arduino* — Feb 2015 – Jun 2017

- I developed an electronic reading device for visually impaired individuals.
- In this project, I developed a glove equipped with six vibration motors representing the six dots of the Braille alphabet. Using the application and the glove, visually impaired individuals can read any content they upload to the app in Braille. Additionally, the system can be used to detect geometric shapes and graphs.
- Me in 2015 presenting the early prototype of the project (Turkish):
https://www.youtube.com/watch?v=6Aogi5rB34g