Dimitrios Karnikis

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Summary

I am studying for my masters at the Computer Science Department of the University of Crete. Moreover, I am a member of the Distributed Computing Systems Laboratory (DCS) at the Institute of Computer Science of the Foundation for Research and Technology, Heraklion Greece.

Research interests

Intel SGX, Arm TrustZone, Android OS, Security, Linux Kernel, JIT, Operating and Distributed Systems.

Education

Master of Science (MSc) student in Computer Science
University of Crete, Greece, current GPA: 9/10   *February 2019 – Ongoing*

Bachelor of Science (BSc) in Computer Science
University of Crete, Greece, GPA: 6.68/10   *Sept 2013 – November 2018*
Thesis: Andromeda: A Trusted Execution Framework for Android Based on Secure Enclaves

Work Experience

- **Distributed Computing Systems Laboratory – FORTH-ICS**   **Intel SGX, C, Android**
  Undergraduate research fellow   *November 2016 – February 2019*
  Main research focused on Intel SGX Linux and Android kernel and drivers, cross-compilers and JIT.

- **Distributed Computing Systems Laboratory – FORTH-ICS**   **Intel SGX, Arm Trustzone**
  Postgraduate research fellow   *February 2019 – Ongoing*
  Main research focused on Intel SGX, Arm Trustzone, Android and Virtualized Environments.

  Academic Supervisor Dr. Sotiris Ioannidis

Notable Projects..

- **Bachelor Thesis:**   *'Andromeda framework'*

  Andromeda is a framework that provides native Intel SGX hardware support for Android x86-64. Andromeda offers the first SGX interface for Android and enhances its cryptographic system. It offers secure execution of cryptographic functions, a Java API that performs enclave actions and an SGX-Android compliant toolchain.

- **Ongoing Projects**
  - **secure libc**
  Implementation of a trusted memory allocation API using Intel SGX/Arm TrustZone. Comparison and evaluation with the vanilla libc memory allocation API
  - **TEE assisted VM integrity monitor**
  Implementation and integration of a Kernel Integrity Monitor based on Qemu using Intel SGX

Publications

- **Andromeda: A Trusted Execution Framework for Android Based on Secure Enclaves**
  ACM Student Research Competition Poster Session, Parallel Architectures and Compilation Techniques (PACT 2018), Cyprus 2018

Attendance in Scientific Conferences

- 10th WISTP International Conference on Information Security Theory and Practice (WISTP 2016) 26-27 September, Crete, Greece
- The 22nd IEEE Symposium on Computers and Communications (ICSS 2017) 03-06 July 2017, Crete, Greece
- The 21st International Symposium on Research in Attacks, Intrusions and Defenses (Raid 2018), 10-12 September 2018, Crete, Greece
- 5th Network and Information Security (NIS 18) Summer School, 24-28 September 2018, Crete, Greece
- The 27th International Conference on Parallel Architectures and Compilation Techniques (PACT 2018), 01-03 November 2018, Limassol, Cyprus
- The 14th International Conference on emerging Networking EXperiments and Technologies (CoNEXT), December 4-7 2018, Crete, Greece
- Technical dry-run training provided by ENISA, July 9-10 2019, Crete, Greece
- 6th Network and Information Security (NIS 19) Summer School, 16-20 September 2019, Crete, Greece

Honor & Awards

- **November 2017 – February 2019**: **Undergraduate Scholarship**

  Scholarship by the Institute of Computer Science, Foundation for Research and Technology - Hellas (FORTH)
- **Best Undergraduate Poster Award at ACM SRC, PACT 2018, Cyprus**
  Monetary price

Advanced Technical Skills

- **Programming:** C, C++, Java
- **Tools:** Git, QEMU, GDB, Visual Studio, Android Studio, Latex
- **Operating Systems:** Linux, Windows, Android
- **Trusted Execution Environments:** Intel SGX, Arm TrustZone