Dimitrios Karnikis

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Interests

Trusted Execution Environments (e.g. Intel SGX, Arm TrustZone), High-Level Languages (e.g. Javascript, Lua), Security, Embedded Devices, Operating and Distributed Systems

Education

Master of Science (MSc) student in Computer Science
University of Crete, Greece   *February 2019 – February 2021*

Bachelor of Science (BSc) in Computer Science
University of Crete, Greece   *Sept 2013 – November 2018*

Work Experience

Aarno Labs – Remote   **TEE's, High-level Languages, CI/CD**
Consultant - Software Engineer   *February 2021 – Ongoing*

DiSCS Laboratory – FORTH-ICS   **Intel SGX, Arm Trustzone**
Postgraduate research fellow   *February 2019 – February 2021*

DiSCS Laboratory – FORTH-ICS   **Intel SGX, Android**
Undergraduate research fellow   *November 2016 – February 2019*

Projects

- **LuaGardia: A Confidential Computing Framework for TEEs** (Master Thesis)
  Ported the Lua interpreter in SGX enclaves enabling dynamic code execution of legacy Lua applications.
- **Atlas: Automated Scale-out of Trust-Oblivious Systems to TEEs** (Ongoing)
  System for automatically scaling out components on TEEs. It uses program transformations to offload function calls of a given application and distribute load among TEE nodes, with respect to the sequential execution.
- **Leveraging Arm TrustZone on mobile devices using Lua Language** (Ongoing)
  Implementation and integration of the Lua interpreter on Trusty TEE
- **Andromeda Framework** (Bachelor Thesis)
  Ported Intel SGX to Android x86 ecosystem. Integrated Intel SGX technology in popular Android services

Publications

- **Andromeda: Enabling Secure Enclaves For The Android Ecosystem**
  Dimitris Deyannis, Dimitris Karnikis, Giorgos Vasiliadis, Sotiris Ioannidis
  4th Information Security Conference (ISC 2021)
- **An Enclave Assisted Snapshot-based Kernel Integrity Monitor**
  Dimitris Deyannis, *Dimitris Karnikis*, Giorgos Vasiliadis, Sotiris Ioannidis
  Proceedings of the 3rd ACM International Workshop on Edge Systems, Analytics and Networking 2020
- **Andromeda: A Trusted Execution Framework for Android Based on Secure Enclaves**
  Dimitris Karnikis, Sotiris Ioannidis ACM Student Research Competition Poster Session, Parallel Architectures and Compilation Techniques (PACT 2018), Cyprus 2018

Honors & Awards

- **November 2019 – Ongoing**: **Postgraduate Scholarship**

  Scholarship by the Institute of Computer Science, FORTH - Hellas
- **November 2017 – February 2019**: **Undergraduate Scholarship**

  Scholarship by the Institute of Computer Science, FORTH - Hellas
- **Best Undergraduate Poster Award at ACM SRC, PACT 2018, Cyprus**

Advanced Technical Skills

- **Programming:** C, C++, Lua, Javascript, Java
- **Tools:** Git, QEMU, GDB, Latex, Bash, Unix Tools
- **Operating Systems:** Linux, Windows, Android