Dimitrios Karnikis

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Interests

Trusted Execution Environments (e.g. Intel SGX, Arm TrustZone), High-Level Languages (e.g. Javascript, Lua), Security, Android OS, 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**   **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 – Ongoing*

- **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 Trusted Execution Environments** (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 Android KeyStore and other popular services

Publications

- **Andromeda: Enabling Secure Enclaves For The Android Ecosystem**
  Dimitris Deyannis, Dimitris Karnikis, Giorgos Vasiliadis, Sotiris Ioannidis
  ISC 2021: 24th Information Security Conference (ISC)
- **An Enclave Assisted Snapshot-based Kernel Integrity Monitor**
  Dimitris Deyannis, *Dimitris Karnikis*, Giorgos Vasiliadis, Sotiris Ioannidis
  EdgeSys '20: Proceedings of the 3rd ACM International Workshop on Edge Systems, Analytics and Networking

- **The Million Dollar Handshake: Secure and Attested Communications in the Cloud**
  Nikolaos Chalkiadakis, Dimitris Deyannis, *Dimitris Karnikis*, Giorgos Vasiliadis and Sotiris Ioannidis
  Proceedings of the 2020 IEEE CLOUD 2020. October 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
- **Trusted Execution Environments:** Intel SGX, Arm TrustZone