# Antonio Ken Iannillo, Ph.D.

CONTACT
INFORMATION

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RESEARCH
INTERESTS

Software engineering, software dependability and security, fault injection testing, fuzz testing, trusted computing

EDUCATION

**Università degli Studi di Napoli Federico II**, Naples, Italy

*PhD in Computer Engineering* — **November 2014 − October 2017**
- Thesis: *Dependability assessment of Android OS*
- Advisors: Dr. Domenico Cotroneo and Dr. Roberto Natella

**Università degli Studi di Napoli Federico II**, Naples, Italy

*M.Sc., Computer Engineering* — **November 2011 − January 2014**
- GPA: 3.91
- Thesis: *A Fault injection tool for Java software applications*
- Final grade: 110/110 cum laude

**Università degli Studi di Napoli Federico II**, Naples, Italy

*B.Sc., Computer Engineering* — **October 2008 − October 2011**
- GPA: 3.88
- Thesis: *Comparison between programming models in Facebook and Google Plus*
- Final grade: 110/110 cum laude

PROFESSIONAL
EXPERIENCE

**University of Luxembourg**, Luxembourg City, Luxembourg     **November 2018 − present**
**Research Associate, Interdisciplinary Centre for Security, Reliability and Trust**
**Research Scientist - since February 2020**
- *Research group:* SEDAN headed by Dr. Radu State.
- *Concordia - H2020 EU project:* Task leader for the liaisons with the stakeholder, where Concordia is a cybersecurity competence network with leading research, technology, industrial and public competences.
- *STARTS - FNR Junior Core project:* Principal Investigator of the "SecuriTy Assessment of tRusTzone-m based Software" (STARTS) project that aims to create a methodology for the security assessment of software based on TrustZone-M technology and a novel verification and validation framework to implement this methodology.
- *OWL - FNR JUMP project*: Principal Investigator of the "Online Workout Platform" (OWL) project that aims to enable the creation of a start-up company to commercialize a tele-rehabilitation platform for cardiac patients.

**Università degli Studi di Napoli Federico II**, Naples, Italy
**November 2017 − October 2018**
**Research Fellow, Dependable Systems and Software Engineering Research Team**
- *Automatic Feature Extraction and Analysis of Faulty Code:* Software faults are code imperfections that may lead to the system's eventually failure. A deep understanding of the code developers insert specific software faults into will help several tasks such as bug prevention, bug detection, and software fault injection.
- *Fuzz Testing on Android OS:* Study and research on important challenges for the robustness (security and dependability) of the Android OS. Study and research on evolutionary algorithms and search strategies. Design and development of a smart testing tool on Android.

**Critiware s.r.l.**, Naples, Italy     **November 2017 - April 2018**
**Research Consultant**

- *Python Fault Injection:* Study and research on Python parsing technologies and programming language theory. Design and implementation of a DSL framework for code changes in Python code. Collaboration with Huawei Technologies Co. Lts.

**Northeastern University**, Boston, MA          **September 2016 − April 2017**
**Research Assistant (Visitor), Network and Distributed Systems Security Lab**
- *Vendor customizations on Android system services:* Study and research on important challenges for the robustness (security and dependability) of the Android OS. Design and development of an innovative testing tool. Robustness and security testing on physical devices. Tutored by Dr. Cristina Nita-Rotaru.

**Consorzio Interuniversitario Nazionale Italiano (CINI)**, Naples, Italy
**January 2014 - October 2014**
**Junior Research Fellow**
- *NFVI reliability:* Study and research of new approach for software reliability evaluation of virtualized environments for Network Function Virtualization (NFV). Design and implementation of a reliability evaluation tool for VMWare ESXi. Collaboration with Huawei Technologies Co. Lts.
- *PON SVEVIA:* Study and research of usability for fault injection tools. Design and implementation of an integrated fault injection tool (Eclipse plug-in) for the fault injection test design and analysis of results, in Java and C/C++ software.

**R&D department, Infosys LTD**, Bangalore, India       **June 2014 − September 2014**
**R&D Intern**
- *Java Fault Injection:* Study and research of new approaches for the injection of software defects. Design and development of a tool for fault injection into the Java Bytecode. This thesis work has been conducted in India during the preparation of my MSc. degree thesis. Tutored by Dr. Santonu Sarkar.

HONORS AND
AWARDS

ISSRE 2017 Conference Best Paper Award

Netsoft 2015 Conference Best Paper Award

Information Technology and Electrical Engineering PhD 2014-2017 scholarship by Università degli Studi di Napoli Federico II

PUBLICATIONS

Antonio Ken Iannillo, Sean Rivera, Darius Suciu, Radu Sion, and Radu State
**"An REE-independent Approach to Identify Callers of TEEs in TrustZone-enabled Cortex-M Devices"** [ACM CyberPhysical System Security Workshop (CPSS '22)]

Christof Ferreira Torres, Antonio Ken Iannillo, Arthur Gervais, and Radu State
**"ConFuzzius: A Data Dependency-Aware Hybrid Fuzzer for Smart Contracts"** [Security and Privacy (EuroS&P), 2021 IEEE European Symposium on]

Christof Ferreira Torres, Antonio Ken Iannillo, Arthur Gervais, and Radu State
**"The Eye of Horus: Spotting and Analyzing Attacks on Ethereum Smart Contracts"** [Financial Cryptography and Data Security (FC), 2021 25th International Conference on]

Sean Rivera, Antonio Ken Iannillo, Sofiana Lagraa, Clement Joly and Radu State
**"ROS-FM: Fast Monitoring for the Robotic Operating System(ROS)"** [Engineering of Complex Computer Systems (ICECCS), 2020 25th International Conference on]

Sean Rivera, Vijay K. Gurbani, Sofiane Lagraa, Antonio Ken Iannillo, and Radu State
**"Leveraging eBPF to preserve user privacy for DNS, DoT, and DoH queries"** [Availability, Reliability, and Security (ARES), 2020 15th International Conference on]

Antonio Ken Iannillo and Radu State
**"A Proposal for Security Assessment of Trustzone-M based Software"** [Software Reliability Engineering (ISSRE), 2019 IEEE 30th International Symposium on]

Domenico Cotroneo, Luigi De Simone, Antonio Ken Iannillo, Roberto Natella, Stefano Rosiello***
"**Analyzing the Context of Bug-Fixing Changes in the OpenStack Cloud Computing Platform**" [Software Reliability Engineering (ISSRE), 2019 IEEE 30th International Symposium on]

Sean Rivera, Sofiane Lagraa, Antonio Ken Iannillo, Radu State
"**Auto-encoding Robot State against Sensor Spoofing Attacks**" [Software Reliability Engineering (ISSRE), 2019 IEEE 30th International Symposium on]

Domenico Cotroneo, Antonio Ken Iannillo, Roberto Natella***
"**Evolutionary Fuzzing of Android OS Vendor System Services**" [Empir Software Eng (2019). https://doi.org/10.1007/s10664-019-09725-6]

Antonio Ken Iannillo, Roberto Natella, Domenico Cotroneo, Cristina Nita-Rotaru
"**Chizpurfle: A Gray-Box Android Fuzzer for Vendor Service Customizations**" [Software Reliability Engineering (ISSRE), 2017 IEEE 28th International Symposium on]
**Conference Best Paper Award**

Domenico Cotroneo, Francesco Fucci, Antonio Ken Iannillo, Roberto Natella, Roberto Pietrantuono***
"**Software Aging Analysis of the Android Mobile OS**" [Software Reliability Engineering (ISSRE), 2016 IEEE 27th International Symposium on]

Domenico Cotroneo, Antonio Ken Iannillo, Roberto Natella, Roberto Pietrantuono, Stefano Russo***
"**The Software Aging and Rejuvenation Repository**" [Software Reliability Engineering (ISSRE), 2015 IEEE 26th International Symposium on]

Domenico Cotroneo, Luigi De Simone, Antonio Ken Iannillo, Anna Lanzaro, Roberto Natella***
"**Dependability Evaluation and Benchmarking of Network Function Virtualization Infrastructures**" [Network Softwarization (NetSoft), 2015 IEEE 1st Conference on]
**Conference Best Paper Award**

Domenico Cotroneo, Luigi De Simone, Antonio Ken Iannillo, Anna Lanzaro, Roberto Natella***
"**Usability of Fault Injection**" [Software Reliability Engineering (ISSRE), 2014 IEEE 25th International Symposium on]

Domenico Cotroneo, Luigi De Simone, Antonio Ken Iannillo, Anna Lanzaro, Roberto Natella, Jian Fan, Wang Ping
"**Network Function Virtualization: Challenges and Directions for Reliability Assurance**" [Software Reliability Engineering (ISSRE), 2014 IEEE 25th International Symposium on]

*** international authorship order does not apply; authors are in an alphabetic order, due to internal policies applied by the authors' research group.

RELEVANT
SKILLS

**Programming Languages:** Python, Bash scripting, Java, C

**Databases:** MySQL, MongoDB

**Other tools and frameworks:** Android, FЯIDA, Pandas