

# Ioannis Gasparis

SECURITY ENGINEER · MOBILE SECURITY EXPERT

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## Experience

### Facebook, AR/VR

Menlo Park, CA

SECURITY ENGINEER

Nov. 2019 - Now

- Created an automated security CI/CD pipeline for AR/VR. The automation scanner runs various custom Android device/app related security tests (static + dynamic analysis tests).
- Performs security reviews on Android AOSP changes in the Portal family of devices.
- Responsible for Android security related education at Facebook including teaching classes as well as developing CTF Android challenges.

### NowSecure

Chicago, IL

ANDROID SECURITY RESEARCHER

Jun. 2017 - Oct. 2019

- Transformed innovating thinking into actual products that contribute to the company's bottom line while staying ahead of the competition.
- Designed and implemented a state of the art fast static analysis tool with nearly 300 tests for Android/iOS in C++. Key Functionalities: emulation, support for apk/jar/aar/elf/macho/ipa files, deobfuscation, taint analysis.
- Other tools: Mobile Backend Scanner in Go, developed various Frida scripts for Android, Android malware analysis using machine learning in Go/Python and a Frida Gadget injector in Go.
- Other: Researched how Play Protect works and how an attacker can bypass it, reverse engineered/attacked various android apps, dynamically analyzed games using computer vision.

### Luminate Wireless

Cupertino, CA

SENIOR SOFTWARE ENGINEER

Mar. 2017 - Jun. 2017

- Member of the Network Services team.
- Key responsibilities include the design and implementation of scalable and resilient LTE core components, as well as the design and implementation of security aspects in the NAS signaling protocol/MME.

### UC Riverside

Riverside, CA

GRADUATE RESEARCH ASSISTANT

Sep. 2012 - Feb. 2017

- Developed a framework in User and Kernel space that discovers/analyzes rootkits on Android devices.
- Developed a framework for flexible, fine-grained dynamic permission management on Android.
- Analyzed how android applications behave under the new fine-grained permission management policy of Android M.
- Developed an Android application with a mathematical framework that captures the impact of the encryption process on the delay experienced by a video flow, and the distortion seen by an eavesdropper.

### Real Time Innovations

Sunnyvale, CA

SECURITY RESEARCH INTERN

Aug. 2015 - Mar. 2016

- Worked in the area of security and Data Distribution Service (DDS) for a patient-centric Integrated Clinical Environment (ICE).
- Integrated different versions of Secure DDS in the ICE platform. Developed and integrated various security policies, and performed different attack scenarios showing the benefits and drawbacks of each policy.

### DOCOMO Innovations

Palo Alto, CA

RESEARCH ENGINEER INTERN

Mar. 2014 - Feb. 2015

- Focused on networking programmability (SDN) and traffic optimization for wireless networks.
- Responsibilities included algorithm development, network simulations, proto-typing and measurements.
- Implemented an LTE emulator (C++) over Mininet Framework and a simulator for LTE Small Cell Architectures (C++) over ns-3.

### AUEB

Athens, Greece

UNDERGRADUATE RESEARCH ASSISTANT

Sep. 2010 - Sep. 2011

- Designed, implemented and evaluated an information-centric Publish-Subscribe Internet architecture (Java and C++).
- Showed how live media can be supported over that architecture by providing evaluated results tested in PlanetLab and in an emulated network over ns-3.

## Education

### University of California, Riverside

Riverside, CA

PH.D. IN COMPUTER SCIENCE

Sep. 2012 - Feb. 2017

- Thesis Title: Ensuring Users' Privacy and Security on Mobile Devices
- Thesis Advisor: Prof. Srikanth Krishnamurthy

### Athens University of Economics and Business

Athens, Greece

B.S. (PTYCHION) IN COMPUTER SCIENCE

Sep. 2007 - Aug. 2011

- Thesis Title: Implementation of an RTFM based Pub/Sub Network Architecture
- Thesis Advisor: Prof. George Xylomenos

## Publications

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### Figment: Fine-grained Permission Management for Mobile Apps

IOANNIS GASPARIS, Z. QIAN, C. SONG, S. V. KRISHNAMURTHY, R. GUPTA, PAUL YU

INFOCOM 2019

### Droid M+: Developer Support for Imbibing Android's New Permission Model

IOANNIS GASPARIS, A. AQIL, Z. QIAN, C. SONG, S. V. KRISHNAMURTHY, R. GUPTA, E. COLBERT

AsiaCCS 2018

### Detecting Android Root Exploits by Learning from Root Providers

IOANNIS GASPARIS, ZHIYUN QIAN, CHENGYU SONG, SRIKANTH V. KRISHNAMURTHY

USENIX Security 2017

### Programming Flows in Dense Mobile Environments: A Multi-user Diversity Perspective

IOANNIS GASPARIS, ULAS C. KOZAT, M. OGUZ SUNAY

arXiv 2015

### Resource Thrifty Secure Mobile Video Transfers on Open WiFi Networks

JOHN GASPARIS, GEORGE PAPAGEORGIOU, SRIKANTH V. KRISHNAMURTHY, RAMESH GOVINDAN, TOM LA PORTA

CoNEXT 2013

### Efficient Real-time Information Delivery in Future Internet Publish-Subscribe Networks

CHRISTOS TSILOPOULOS, IOANNIS GASPARIS, GEORGE XYLOMENOS, GEORGE C. POLYZOS

ICNC 2013

## Skills

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**Programming** C/C++, Go, Python, Java, Bash, ARM/x86 Assembly, Javascript,  $\text{\LaTeX}$

**Frameworks** Android SDK/NDK, gRPC, Protocol buffers, Docker, DDS

**Tools & OS** Frida, radare2, IDA, GNU/Linux

**Areas** Mobile Security/Privacy, Distributed Systems, Software Engineering, Computer Networking (Wi-Fi, LTE, SDN)

**Languages** Greek, English

## Honors & Awards

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2012 **Dean's Distinguished Fellowship**, UC Riverside

Riverside, U.S.A

## Blog Posts

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### Think Twice Before Adopting Security By Obscurity in Kotlin Android Apps

[HTTP://BIT.LY/2ZRS1T6](http://bit.ly/2ZRS1T6)

NowSecure

Jul. 2019

### How to Guard Against Mobile App Deep Link Abuse

[HTTP://BIT.LY/2ZVOOC1](http://bit.ly/2ZVOOC1)

NowSecure

Apr. 2019

### Mobile App Session Replay & Its Privacy Impact

[HTTP://BIT.LY/2KWLYMV](http://bit.ly/2KWLYMV)

NowSecure

Feb. 2019

### Shining a spotlight on privacy violations in children's mobile apps

[HTTP://BIT.LY/2HoQXII](http://bit.ly/2HoQXII)

NowSecure

Jan. 2019

### Less than 1% of popular Android apps tested use the Google SafetyNet Attestation API

[HTTP://BIT.LY/2ZHU8DP](http://bit.ly/2ZHU8DP)

NowSecure

Aug. 2017