

Thanasis Petsas

R&D ENGINEER · M.Sc. IN COMPUTER SCIENCE · UNIVERSITY OF CRETE

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Areas of Expertise

Mobile Security • Static & Dynamic Analysis • Malware Analysis • Reverse Engineering • Network Monitoring & Traffic Analysis • Incident Response • Secure Software Development • Web Scraping • UI Automation

Technical Skills

Programming	C/C++, Python, Java, Bash
Tools	IDA Pro, Android JNI/NDK, Gradle, Android ADB, Mitmproxy, LaTeX, Gnuplot
DevOps	AWS, GCP, Terraform, Jenkins, CircleCI, Airbrake
DBMS	MySQL, PostgreSQL, SQLite
Version Control	Git, Mercurial, SVN
Languages	Greek (Native Speaker), English (Fluent), Spanish (Basic)

Work Experience

Broadcom Inc.

San Francisco, CA

R&D / SOFTWARE ENGINEER

Nov. 2019 - Now

- Transitioned with SEP (Symantec Endpoint Protection) Mobile team into Broadcom
- Worked on supporting the mobile security product during the transition and migration to Broadcom's infrastructure
- Worked on transitioning and deploying SEP Mobile's VPN Servers from AWS to GCP using Terraform
- Implemented a malicious hotspot detection feature on iOS SEP Mobile app
- Developed unit tests for increasing code coverage of iOS SEP Mobile app

Symantec

San Francisco, CA

R&D ENGINEER

Oct. 2018 - Oct. 2019

- Joined Modern OS Security Team
- Implemented dynamic features for detecting specific behaviors of Android applications
- Assisted in development and integration of Android Google Play apps scraping
- Designed and developed a framework for faking Android and iOS sensors for enhancing our dynamic analysis engines
- Updated our dynamic analysis hooking engines to be compatible with Android (9.0) Pie

Appthority

San Francisco, CA

R&D ENGINEER

Jan. 2016 - Oct. 2018

- Implemented hooks for detecting apps that try to access the device's clipboard
- Implemented hooks for detecting apps that use SSL pinning
- Implemented hooks for detecting apps that disable SSL validation
- Updated our dynamic analysis hooking engines to be compatible with Android (8.0) Oreo

SOFTWARE ENGINEER INTERN

San Francisco, CA

- Developed smart techniques for exercising multiple execution paths during dynamic analysis of Android apps

Oct. 2015 - Dec. 2015

ICS-FORTH

Heraklion, Crete, Greece

POSTGRADUATE FELLOW

Nov. 2012 - Sep. 2015

- Research on Cybersecurity and writing of scientific papers
- Participation in the EU-funded projects: SysSec (A European Network of Excellence in Managing Threats and Vulnerabilities in the Future Internet), NECOMA (Nippon-European Cyberdefense-Oriented Multilayer threat Analysis)
- Study on modeling app of popularity in Android application marketplaces
- Implementation of emulation evasion techniques on Android
- Energy consumption analysis of Android Anti-Virus software
- Measurements on the quantification of Google's two-factor authentication's adoption
- Implementation of an anti-tracking mechanism for Android that preserves users privacy during browsing

UNDERGRADUATE FELLOW

Heraklion, Crete, Greece

- Participation in EU-funded projects: NoAH (A European Network of Affined Honey Pots), WOMBAT (Worldwide Observatory of Malicious Behaviors and Attack Threats)
- Research on IM threats and implementation of an IM honeypot prototype
- Research on how personalized phishing campaigns may abuse social networks for harvesting email addresses

Honors & Awards

INTERNATIONAL

- 2017 **Best Paper Honorable Mention**, 26th International World Wide Web Conference (WWW '17) *Perth, Australia*
- 2015 **Travel Grant**, 10th European Conference on Computer Systems (EuroSys '15) *Bordeaux France*
- 2012 **Gold Prize**, Malware-analysis competition "IWSEC Cup 2012" (IWSEC '12) *Fukuoka, Japan*

DOMESTIC

- 2009-2012 **Graduate Research Fellowship**, Foundation for Research and Technology - Hellas (FORTH) *Heraklion, Greece*
- 2009 **Undergraduate Research Fellowship**, Foundation for Research and Technology - Hellas (FORTH) *Heraklion, Greece*

Cybersecurity Contests

INTERNATIONAL

- 2012 **IWSEC Cup**, Malware-analysis competition (IWSEC '12) *Fukuoka, Japan*

DOMESTIC

- 2011 **PANOPTIS**, 2nd National Cyber Defense Exercise *Greece*
- 2010 **NCDEX**, NATO Cyber Defense Exercise *Greece*
- 2010 **PANOPTIS**, 1st National Cyber Defense Exercise *Greece*

Teaching Experience

- 2012, 2015 **Teaching Assistant**, CS459 – Internet Measurements, University of Crete *Heraklion, Greece*
- 2014 **Lecturer**, Evading dynamic-analysis environments – 2nd SysSec Summer School Program *Amsterdam, The Netherlands*
- 2010, 2011 **Teaching Assistant**, CS455 – Cybersecurity Lab, University of Crete *Heraklion, Greece*
- 2010, 2011 **Teaching Assistant**, CS345 – Operating Systems, University of Crete *Heraklion, Greece*
- 2009 **Teaching Assistant**, CS240 – Data Structures, University of Crete *Heraklion, Greece*

Education

University of Crete

M.SC. IN COMPUTER SCIENCE – GPA: 9.0 OUT OF 10.0 *Heraklion, Crete, Greece*
Oct. 2009 – Nov. 2012
Master Thesis: *Rise of the Planet of the Apps: A Systematic Study of the Mobile App Ecosystem*.
Supervisor: *Evangelos P. Markatos*

University of Crete

B.SC. IN COMPUTER SCIENCE – GPA: 7.56 OUT OF 10.0 *Heraklion, Crete, Greece*
Sept. 2004 – Jul. 2009
Undergraduate Thesis: *HoneyBuddy: A HoneyPot Architecture for Detecting IM Threats in the Wild*.
Supervisor: *Evangelos P. Markatos*

Press

- 2014 **The Register**, *Droid malware cloak outwits Google Bouncer and friends* – <https://bit.ly/35tMVdI>
- 2014 **The Hacker News**, *Dynamic Analysis tools for Android Fail to Detect Malware with Heuristic Evasion Techniques* – <https://bit.ly/3BSx30m>

Publications

- Elias Papadopoulos, Michalis Diamantaris, Panagiotis Papadopoulos, Thanasis Petsas, Sotiris Ioannidis, and Evangelos Markatos. **The Long-Standing Privacy Debate: Mobile Websites Vs Mobile Apps**. In *Proceedings of the 26th International World Wide Web Conference, WWW '17*, Perth, Western Australia, 2017. (*Best Paper Honorable Mention*).
- Thanasis Petsas, Antonis Papadogiannakis, Michalis Polychronakis, Evangelos P. Markatos, and Thomas Karagiannis. **Measurement, Modeling, and Analysis of the Mobile App Ecosystem**. In *ACM Transactions on Modeling and Performance Evaluation of Computing Systems (TOMPECS) journal*, 2016.
- Panagiotis Papadopoulos, Thanasis Petsas, Giorgos Christou, and Giorgos Vasiliadis. **MAD: A Middleware Framework for Multi-Step Attack Detection**. In *Proceedings of the 4th IEEE International Workshop on Building Analysis Datasets and Gathering Experience Returns for Security, BADGERS '15*, Kyoto, Japan, 2015.

- Iasonas Polakis, Michalis Diamantaris, Thanasis Petsas, Federico Maggi, and Sotiris Ioannidis. **Powerslave: Analyzing the Energy Consumption of Mobile Antivirus Software**. In *Proceedings of the 12th Conference on Detection of Intrusions and Malware and Vulnerability Assessment*, DIMVA '15, Milano, Italy, 2015.
- Thanasis Petsas, Giorgos Tsirantonakis, Elias Athanasopoulos, and Sotiris Ioannidis. **Two-factor Authentication: Is the World Ready? Quantifying 2FA Adoption**. In *Proceedings of the Eighth European Workshop on System Security*, EuroSec '15, Bordeaux, France, 2015.
- Thanasis Petsas, Kazuya Okada, Hajime Tazaki, Gregory Blanc, and Pawel Pawlinski. **A Trusted Knowledge Management System for Multi-layer Threat Analysis**. In *Proceedings of the 7th International Conference on Trust and Trustworthy, TRUST '14 (Extended Abstract)*, Heraklion, Crete, Greece, 2014.
- Thanasis Petsas, Giannis Voyatzis, Elias Athanasopoulos, Michalis Polychronakis, and Sotiris Ioannidis. **Rage Against the Virtual Machine: Hindering Dynamic Analysis of Android Malware**. In *Proceedings of the Seventh European Workshop on System Security*, EuroSec '14, Amsterdam, The Netherlands, 2014.
- Thanasis Petsas, Antonis Papadogiannakis, Michalis Polychronakis, Evangelos P. Markatos, and Thomas Karagiannis. **Rise of the Planet of the Apps: A Systematic Study of the Mobile App Ecosystem**. In *Proceedings of the 2013 Conference on Internet Measurement*, IMC '13, Barcelona, Spain, 2013.
- Iasonas Polakis, Georgios Kontaxis, Spiros Antonatos, Eleni Gessiou, Thanasis Petsas, and Evangelos P. Markatos. **Using Social Networks to Harvest Email Addresses**. In *Proceedings of the 9th Annual ACM Workshop on Privacy in the Electronic Society*, WPES '10, Chicago, IL, 2010.
- Iasonas Polakis, Thanasis Petsas, Evangelos P. Markatos, and Spyros Antonatos. **A Systematic Characterization of IM Threats Using Honey-pots**. In *Proceedings of the Network and Distributed System Security Symposium, NDSS '10, San Diego, California, USA*, San Diego, CA, 2011.