

Thanasis Petsas

R&D SOFTWARE 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** Amazon AWS, Google Cloud Platform, 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 Appthority's dynamic analysis engines and SEP (Symantec Endpoint Protection) Mobile's VPN servers into Broadcom's infrastructure
- 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 SOFTWARE 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 SOFTWARE 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
- Implemented emulation evasion techniques on Android
- Conducted energy consumption analysis of Android Anti-Virus software
- Conducted measurements of Google's two-factor authentication's adoption
- Designed 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 Honey-pot 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 Tsiantonakis, 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.