Nick Nikiforakis

Curriculum Vitae

Department of Computer Science
Stony Brook University
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Research Interests

Web Security and Privacy, Software Security, Intrusion Detection, Cybercrime

Employment

Aug 2014 – Present	**Assistant Professor**, *Department of Computer Science*, Stony Brook University.
2013–2014	**Postdoctoral Researcher**, *Department of Computer Science*, KU Leuven, Belgium.
Jun - Sep 2012	**Research Visitor**, *Department of Computer Science*, University of California, Santa Barbara.

Education

2009–2013 **Ph.D. in Computer Science**,
Computer Science Department, KU Leuven, Belgium.
thesis *Towards a Secure Web: Critical Vulnerabilities and Client-Side Countermeasures*
supervisors Prof. Wouter Joosen and Prof. Frank Piessens

2007–2009 **M.Sc. in Parallel and Distributed Systems**,
Computer Science Department, University of Crete, Greece.
thesis *Parasitic Storage: Free and globally accessible gigabytes*
supervisor Professor Evangelos Markatos

2003–2007 **B.Sc. in Computer Science**,
Computer Science Department, University of Crete, Greece.
thesis *Handling real-time network data generated by network-monitoring applications*
supervisor Professor Evangelos Markatos

Teaching Experience

Fall 2016	Instructor, CSE509 System Security, Stony Brook University
Spring 2016	Instructor, CSE659 Computer Security Seminar, Stony Brook University
Fall 2015	Instructor, CSE509 System Security, Stony Brook University
Spring 2015	Instructor, CSE508 Network Security, Stony Brook University
Fall 2014	Instructor, CSE509 System Security, Stony Brook University
Fall 2013	Teaching Assistant, Secure Software for Athens 2013, KU Leuven
Spring 2013	Teaching Assistant, Capita Selecta Secure Software, KU Leuven
Fall 2011	Teaching Assistant, Capita Selecta Secure Software, KU Leuven
Fall 2010	Teaching Assistant, Capita Selecta Secure Software, KU Leuven
Fall 2008	Teaching Assistant, CS557 - Secure Systems, University of Crete
Spring 2008	Teaching Assistant, CS455 - Lab for Network Attacks and Defenses, University of Crete.
Fall 2007	Teaching Assistant, CS345 - Operating Systems, University of Crete

Work Experience

2014 – present	As an Assistant Professor at Stony Brook University, I teach security-related courses, advise Ph.D. and M.Sc. students, write and review academic and industry grants, write and review papers for the top conferences and journals of my field, and participate in administrative activities, such as the reviewing of Ph.D. and M.Sc. admissions.
2013 – 2014	As a Postdoctoral Researcher at KU Leuven, I continued the empirical exploratory security and privacy research, while coaching young graduate students.
2009 – 2013	During my PhD at KU Leuven, I had the opportunity to successfully coach the theses of four Master students, teach the "Hands-on Hacking" module of the Capita Selecta Secure Software course, and do research on many areas, relevant to security, such as software security, web security, and privacy.
Jun – Sep 2012	I visited Prof. Christopher Kruegel and Prof. Giovanni Vigna for 3 months at the University of California, Santa Barbara and worked in the Computer Security Lab on web-based device fingerprinting.
2006 – 2009	I worked as a Research Assistant at the Distributed Computing Systems Lab of FORTH-ICS in Heraklion. I participated in three EU-funded programs: LOBSTER (Large-scale Monitoring of Broadband Internet Infrastructures), MOMENT (Monitoring and Measurement in the Next Generation Technologies), and NoAH (Network of Affined Honeypots).

Grants

- *TWC: Small: Combating Environment-aware Malware* (2016.09 – 2019.08)
  - PI: Michail Polychronakis, co-PI: Nick Nikiforakis, Sponsor: National Science Foundation, Amount: $498,036
- *TWC: Small: Emerging Attacks Against the Mobile Web and Novel Proxy Technologies for Their Containment* (2016.09 – 2019.08)
  - PI: Nick Nikiforakis, co-PI: Nima Honarmand, Sponsor: National Science Foundation, Amount: $499,481
- *Early Detection of User-impersonating Attackers using Multilayer Tripwires* (2016.03 – 2019.02)
  - PI: Nick Nikiforakis, co-PI: Erez Zadok, Sponsor: Office of Naval Research, Amount: $586,215
- *TWC: Small: Cross-application and Cross-platform Tracking of Web Users: Techniques and Countermeasures* (2015.09 – 2018.08)
  - PI: Nick Nikiforakis, co-PI: Long Lu, Sponsor: National Science Foundation, Amount: $499,204
- *Understanding and defending against technical support scams* (2015.07 – 2015.12)
  - PI: Nick Nikiforakis, Sponsor: Cyber Research Institute, Amount: $67,000
- *Grant for teaching network security* (2015.02)
  - PI: Nick Nikiforakis, Sponsor: Amazon Web Services, Amount: $8,600
- *Grant for conducting cloud experiments* (2014.02)
  - PI: Nick Nikiforakis, Sponsor: Linode, Amount: $2,000

Awards

- Graduate Teaching Award, Department of Computer Science, Stony Brook University, 2016
- Honorable Mention at PETS 2016
- Best Paper Award at ISC 2014

Public Service

Program Chair

- Symposium on Electronic Crime Research (eCrime 2017), co-chair with Damon McCoy
- OWASP Application Security Conference, Research Track (OWASP AppSecEU 2015)

Publicity Chair

- 20th International Symposium on Research in Attacks, Intrusions and Defenses (RAID 2017)

Member of Program Committees

- 26th USENIX Security Symposium (USENIX Security 2017)
- 14th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA 2017)
- 7th ACM Conference on Data and Application Security and Privacy (CODASPY 2017)
- 25th International World Wide Web Conference (WWW 2017)
- 2nd IEEE European Symposium on Security and Privacy (EuroS&P 2017)
- 16th ACM Symposium on Applied Computing (SAC 2017)

- 32nd Annual Computer Security Applications Conference (ACSAC 2016)
- 23rd ACM Conference on Computer and Communications Security (CCS 2016)
- 25th USENIX Security Symposium (USENIX Security 2016)
- 11th Symposium on Electronic Crime Research (eCrime 2016)
- 13th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA 2016)
- 6th ACM Conference on Data and Application Security and Privacy (CODASPY 2016)
- 8th International Symposium on Engineering Secure Software and Systems (ESSoS 2016)
- 22nd ACM Conference on Computer and Communications Security (CCS 2015)
- 24th USENIX Security Symposium (USENIX Security 2015)
- 8th ACM Conference on Security and Privacy in Wireless and Mobile Networks (WiSec 2015)
- 12th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA 2015)
- 24th International World Wide Web Conference (WWW 2015)
- 8th European Workshop on System Security (EuroSec 2015)
- 7th International Symposium on Engineering Secure Software and Systems (ESSoS 2015)
- 7th European Workshop on System Security (EuroSec 2014)
- 5th International Conference on Emerging Ubiquitous Systems and Pervasive Member of Networks (EUSPN 2014)
- 12th IEEE International Conference on Embedded and Ubiquitous Computing (EUC 2014)
- 7th IEEE Workshop on Network Measurements (IEEE WNM 2013)
- 4th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN 2013)
- OWASP AppSec Europe 2013 - Research Track (AppSec 2013)
- 6th European Workshop on System Security (EuroSec 2013)
- 14th IFIP Conference on Communications and Multimedia Security (CMS 2013)
- 5th European Workshop on System Security (EuroSec 2012)
- 13th IFIP Conference on Communications and Multimedia Security (CMS 2012)

Invited Talks

Feb 2016	Messaging, Malware and Mobile Anti-Abuse Working Group – No Honor Among Thieves: A Large-Scale Analysis of Malicious Web Shells
May 2015	International World Wide Web Conference, W3C Track: Web Security Architecture – The Pretense of Security
Oct 2014	Princeton Web Privacy and Transparency Conference – Web-based Device Fingerprinting
Feb 2014	SecAppDev – Browser fingerprinting (how did we get here?), Leuven, Belgium
Dec 2013	Microsoft Research – Everything you always wanted to know about web-based device fingerprinting (but were afraid to ask), Redmond, Washington, US
Nov 2013	November OWASP BeNeLux – Everything you always wanted to know about web-based device 2013 fingerprinting (but were afraid to ask), Amsterdam, The Netherlands
Jul 2013	SysSec Workshop – Cookieless Monster: Exploring the Ecosystem of Web-based Device Fingerprinting, Bochum, Germany
Feb 2013	SecAppDev – Sandboxing JavaScript, Leuven, Belgium

Oct 2012 Web Application Security Seminar Dagstuhl – You are what you include: Large-scale analysis of remote JavaScript inclusions, Bochum, Germany

Jul 2011 OWASP Netherlands Chapter – Abusing locality in Shared Web Hosting, Amsterdam, The Netherlands

Dec 2010 OWASP BeNeLux – On the Privacy of File Sharing Services, Eindhoven, The Netherlands

Selected Media Coverage

Jun 2016 Washington Times – Half the ads on livestreaming sites pose security risks to viewers: Report – http://www.washingtontimes.com/news/2016/jun/15/half-ads-livestreaming-sites-pose-security-risks-v/

Feb 2016 BBC – Illegal football streams are 'dangerous', study says – http://www.bbc.com/news/technology-35434765

Dec 2015 TechRepublic – DDoS mitigation may leave your site vulnerable – http://www.techrepublic.com/article/ddos-mitigation-may-leave-your-site-even-more-vulnerable/

Oct 2015 The Register – DDoS defences spiked by CloudPiercer tool - paper – http://www.theregister.co.uk/2015/10/08/cloudpiercer_tool_lifts_ddos_protection_cloak_from_70_percent_of_sites/

Oct 2015 SC Magazine – CloudPiercer tool discloses DDoS defence providers – http://www.scmagazineuk.com/cloudpiercer-tool-discloses-ddos-defence-providers/article/444000/

Sep 2015 KrebsOnSecurity – With Stolen Cards, Fraudsters Shop to Drop – http://krebsonsecurity.com/2015/09/with-stolen-cards-fraudsters-shop-to-drop/

Sep 2015 SlashDot – Study: $1.8 Billion In Reshipping Fraud With Stolen Cards Each Year –http://news.slashdot.org/story/15/09/28/2157238/study-18-billion-in-reshipping-fraud-with-stolen-cards-each-year

Feb 2015 World Trademark Review – Groundbreaking typosquatting research reveals true scale of the problem – http://www.worldtrademarkreview.com/Blog/Detail.aspx?g=59f40171-11fb-4806-a837-2c0b29564681

Jan 2015 HelpNet Security – Typosquatting abuse of 500 most popular websites analyzed – http://www.net-security.org/secworld.php?id=17833

Dec 2014 ArsTechnica – Sites certified as secure often more vulnerable to hacking, scientists find – http://www.arstechnica.com/security/2014/12/sites-certified-as-secure-often-morevulnerable-to-hacking-scientists-find/

Magazine Articles

Jan 2015 IEEE IT Pro – Protected Web Components: Hiding Sensitive Information in the Shadows

Aug 2014 IEEE Spectrum – Browse at your own risk

Dec 2013 IEEE Security & Privacy – On the Workings and Current Practices of Web-based Device Fingerprinting

Mar 2011 Hackin9 – Direct Object Reference or, How a Toddler Can Hack Your Web Application

Publications

[1] Oleksii Starov and Nick Nikiforakis. Extended Tracking Powers: Measuring the Privacy Diffusion Enabled by Browser Extensions. In *Proceedings of the 26th International World Wide Web Conference (WWW)*, 2017.

[2] Enrico Mariconti, Jeremiah Onaolapo, Syed Sharique Ahmad, Nicolas Nikiforou, Manuel Egele, Nick Nikiforakis, and Gianluca Stringhini. What's in a Name? Understanding Profile Name Reuse on Twitter. In *Proceedings of the 26th International World Wide Web Conference (WWW)*, 2017.

[3] Najmeh Miramirkhani, Oleksii Starov, and Nick Nikiforakis. Dial One for Scam: A Large-Scale Analysis of Technical Support Scams. In *Proceedings of the 24th Network and Distributed System Security Symposium (NDSS)*, 2017.

[4] Georg Merzdovnik, Markus Huber, Damjan Buhov, Nick Nikiforakis, Sebastian Neuner, Martin Schmiedecker, and Edgar Weippl. Block Me If You Can: A Large-Scale Study of Tracker-Blocking Tools. In *Proceedings of the 2nd IEEE European Symposium on Security and Privacy (IEEE EuroS&P)*, 2017.

[5] Enrico Mariconti, Jeremiah Onaolapo, Syed Sharique Ahmad, Nicolas Nikiforou, Manuel Egele, Nick Nikiforakis, and Gianluca Stringhini. Why Allowing Profile Name Reuse Is A Bad Idea. In *Proceedings of the 9th European Workshop on System Security (EUROSEC)*, 2016.

[6] Oleksii Starov, Johannes Dahse, Syed Sharique Ahmad, Thorsten Holz, and Nick Nikiforakis. No Honor Among Thieves: A Large-Scale Analysis of Malicious Web Shells. In *Proceedings of the 25th International World Wide Web Conference (WWW)*, 2016.

[7] Zubair Rafique, Tom Van Goethem, Wouter Joosen, Christophe Huygens, and Nick Nikiforakis. It's Free for a Reason: Exploring the Ecosystem of Free Live Streaming Services. In *Proceedings of the 23rd Network and Distributed System Security Symposium (NDSS)*, 2016.

[8] Oleksii Starov, Phillipa Gill, and Nick Nikiforakis. Are You Sure You Want to Contact Us? Quantifying the Leakage of PII via Website Contact Forms. In *Proceedings of the 16th Privacy Enhancing Technologies Symposium (PETS)*, 2016.

[9] Tom Van Goethem, Wouter Joosen, and Nick Nikiforakis. The Clock is Still Ticking: Timing Attacks in the Modern Web. In *Proceedings of the 22nd ACM Conference on Computer and Communications Security (CCS)*, 2015.

[10] Thomas Vissers, Tom Van Goethem, Wouter Joosen, and Nick Nikiforakis. Maneuvering Around Clouds: Bypassing Cloud-based Security Providers. In *Proceedings of the 22nd ACM Conference on Computer and Communications Security (CCS)*, 2015.

[11] Shuang Hao, Kevin Borgolte, Nick Nikiforakis, Gianluca Stringhini, Manuel Egele, Mike Eubanks, Brian Krebs, and Giovanni Vigna. Drops for Stuff: An Analysis of Reshipping Mule Scams. In *Proceedings of the 22nd ACM Conference on Computer and Communications Security (CCS)*, 2015.

[12] Nick Nikiforakis, Wouter Joosen, and Benjamin Livshits. PriVaricator: Deceiving Fingerprinters with Little White Lies. In *Proceedings of the 24th International World Wide Web Conference (WWW)*, 2015.

[13] Thomas Vissers, Wouter Joosen, and Nick Nikiforakis. Parking Sensors: Analyzing and Detecting Parked Domains. In *Proceedings of the 22nd Network and Distributed System Security Symposium (NDSS)*, 2015.

[14] Pieter Agten, Wouter Joosen, Frank Piessens, and Nick Nikiforakis. Seven Months' Worth of Mistakes: A Longitudinal Study of Typosquatting Abuse. In *Proceedings of the 22nd Network and Distributed System Security Symposium (NDSS)*, 2015.

[15] Nick Nikiforakis, Marco Balduzzi, Lieven Desmet, Frank Piessens, and Wouter Joosen. Soundsquatting: Uncovering the use of homophones in domain squatting. In *Proceedings of the 17th Information Security Conference (ISC)*, 2014.

[16] Tom Van Goethem, Frank Piessens, Wouter Joosen, and Nick Nikiforakis. Clubbing Seals: Exploring the Ecosystem of Third-party Security Seals. In *Proceedings of the 21st ACM Conference on Computer and Communications Security (CCS)*, pages 918–929, 2014.

[17] Ping Chen, Nick Nikiforakis, Lieven Desmet, and Christoph Huygens. Security Analysis of the Chinese Web: How well is it protected? In *the Workshop of Cyber Security Analytics and Automation (SafeConfig)*, 2014.

[18] Thomas Vissers, Nick Nikiforakis, Nataliia Bielova, and Wouter Joosen. Crying Wolf? On the Price Discrimination of Online Airline Tickets. In *the 7th Workshop on Hot Topics in Privacy Enhancing Technologies (HotPETs)*, 2014.

[19] Tom Van Goethem, Ping Chen, Nick Nikiforakis, Lieven Desmet, and Wouter Joosen. Large-scale Security Analysis of the Web: Challenges and Findings. In *Proceedings of the 7th International Conference on Trust & Trustworthy Computing (TRUST)*, pages 110–126, 2014.

[20] Steven Van Acker, Nick Nikiforakis, Lieven Desmet, Frank Piessens, and Wouter Joosen. Monkey-in-the-browser: Malware and vulnerabilities in augmented browsing script markets. In *Proceedings of the 9th ACM Symposium on Information, Computer and Communications Security (ASIACCS)*, 2014.

[21] Nick Nikiforakis, Federico Maggi, Gianluca Stringhini, M Zubair Rafique, Wouter Joosen, Christopher Kruegel, Frank Piessens, Giovanni Vigna, and Stefano Zanero. Stranger danger: exploring the ecosystem of ad-based url shortening services. In *Proceedings of the 23rd International World Wide Web Conference (WWW)*, pages 51–62, 2014.

[22] Ping Chen, Nick Nikiforakis, Lieven Desmet, and Christophe Huygens. A Dangerous Mix: Large-scale analysis of mixed-content websites. In *Proceedings of the 16th Information Security Conference (ISC)*, 2013.

[23] Gunes Acar, Marc Juarez, Nick Nikiforakis, Claudia Diaz, Seda Gürses, Frank Piessens, and Bart Preneel. Fpdetective: Dusting the web for fingerprinters. In *Proceedings of the ACM SIGSAC Conference on Computer & Communications Security (CCS)*, pages 1129–1140, 2013.

[24] Nick Nikiforakis, Frank Piessens, and Wouter Joosen. HeapSentry: Kernel-assisted Protection against Heap Overflows. In *Proceedings of the 10th Conference on Detection of Intrusions and Malware & Vulnerability Analysis (DIMVA)*, pages 177–196, 2013.

[25] Nick Nikiforakis, Steven Van Acker, Wannes Meert, Lieven Desmet, Frank Piessens, and Wouter Joosen. Bitsquatting: Exploiting bit-flips for fun, or profit? In *Proceedings of the 22nd International World Wide Web Conference (WWW)*, pages 989–998, 2013.

[26] Nick Nikiforakis, Alexandros Kapravelos, Wouter Joosen, Christopher Kruegel, Frank Piessens, and Giovanni Vigna. Cookieless monster: Exploring the ecosystem of web-based device fingerprinting. In *Proceedings of the 34th IEEE Symposium on Security and Privacy (IEEE S&P)*, pages 541–555, 2013.

[27] Philippe De Ryck, Nick Nikiforakis, Lieven Desmet, and Wouter Joosen. Tabshots: Client-side detection of tabnabbing attacks. In *Proceedings of the 8th ACM SIGSAC Symposium on Information, Computer and Communications Security (AsiaCCS)*, pages 447–455, May 2013.

[28] Willem De Groef, Dominique Devriese, Nick Nikiforakis, and Frank Piessens. FlowFox: a Web Browser with Flexible and Precise Information Flow Control. In *Proceedings of the 19th ACM Conference on Computer and Communications Security (CCS)*, pages 748–759, 2012.

[29] Nick Nikiforakis, Luca Invernizzi, Alexandros Kapravelos, Steven Van Acker, Wouter Joosen, Christopher Kruegel, Frank Piessens, and Giovanni Vigna. You Are What You Include: Large-scale Evaluation of Remote JavaScript Inclusions. In *Proceedings of the ACM Conference on Computer and Communications Security (CCS)*, pages 736–747, 2012.

[30] Job Noorman, Nick Nikiforakis, and Frank Piessens. There is Safety in Numbers: Preventing Control-Flow Hijacking by Duplication. In *Proceedings of the 17th Nordic Conference on Secure IT Systems (NordSec)*, 2012.

[31] Sebastian Lekies, Nick Nikiforakis, Walter Tighzert, Frank Piessens, and Martin Johns. DEMACRO: Defense against Malicious Cross-domain Requests. In *Proceedings of the 15th International Symposium on Research In Attacks, Intrusions and Defenses (RAID)*, pages 254–273, 2012.

[32] Philippe De Ryck, Nick Nikiforakis, Lieven Desmet, Frank Piessens, and Wouter Joosen. Serene: Self-reliant client-side protection against session fixation. In *Proceedings of 12th IFIP International Conference on Distributed Applications and Interoperable Systems (DAIS)*, pages 59–72. Springer, 2012.

[33] Nick Nikiforakis, Steven Van Acker, Frank Piessens, and Wouter Joosen. Exploring the Ecosystem of Referrer-Anonymizing Services. In *Proceedings of the 12th Privacy Enhancing Technology Symposium (PETS)*, pages 259–278, 2012.

[34] Pieter Agten, Nick Nikiforakis, Raoul Strackx, Willem De Groef, and Frank Piessens. Recent Developments in Low-Level Software Security. In *Proceedings of the 6th Workshop in Information Security Theory and Practice (WISTP)*, 2012.

[35] Steven Van Acker, Nick Nikiforakis, Lieven Desmet, Wouter Joosen, and Frank Piessens. FlashOver: Automated Discovery of Cross-site Scripting Vulnerabilities in Rich Internet Applications. In *Proceedings of the 7th ACM Symposium on Information, Computer and Communications Security (ASIACCS)*, 2012.

[36] Francesco Gadaleta, Nick Nikiforakis, Jan Tobias Muhlberg, and Wouter Joosen. HyperForce: Hypervisor-enForced Execution of Security-Critical Code. In *Proceedings of the 27th IFIP International Information Security and Privacy Conference (IFIP SEC)*, 2012.

[37] John Wilander, Nick Nikiforakis, Yves Younan, Mariam Kamkar, and Wouter Joosen. RIPE: Runtime Intrusion Prevention Evaluator. In *In Proceedings of the 27th Annual Computer Security Applications Conference, (ACSAC)*, pages 41–50, 2011.

[38] Francesco Gadaleta, Nick Nikiforakis, Yves Younan, and Wouter Joosen. Hello rootKitty: A lightweight invariance-enforcing framework. In *Proceedings of the 14th Information Security Conference (ISC)*, 2011.

[39] Nick Nikiforakis, Marco Balduzzi, Steven Van Acker, Wouter Joosen, and Davide Balzarotti. Exposing the lack of privacy in file hosting services. In *Proceedings of the 4th USENIX conference on Large-scale exploits and emergent threats (LEET)*, 2011.

[40] Nick Nikiforakis, Wouter Joosen, and Martin Johns. Abusing Locality in Shared Web Hosting. In *Proceedings of the 4th European Workshop on System Security (EuroSec)*, pages 2:1–2:7, 2011.

[41] Nick Nikiforakis, Wannes Meert, Yves Younan, Martin Johns, and Wouter Joosen. SessionShield: Lightweight Protection against Session Hijacking. In *Proceedings of the 3rd International Symposium on Engineering Secure Software and Systems (ESSoS)*, pages 87–100, 2011.

[42] Steven Van Acker, Nick Nikiforakis, Pieter Philippaerts, Yves Younan, and Frank Piessens. ValueGuard: Protection of native applications against data-only buffer overflows. In *Proceedings of the Sixth International Conference on Information Systems Security (ICISS)*, 2010.

[43] Nick Nikiforakis, Yves Younan, and Wouter Joosen. HProxy: Client-side detection of SSL stripping attacks. In *Proceedings of the 7th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA)*, pages 200–218, 2010.

[44] Demetris Antoniades, Michalis Polychronakis, Nick Nikiforakis, Evangelos P. Markatos, and Yiannis Mitsos. Monitoring three National Research Networks for Eight Weeks: Observations and Implications. In *6th IEEE Workshop on End-to-End Monitoring Techniques and Services (E2EMon)*, 2008.

[45] Nikos Nikiforakis, Andreas Makridakis, Elias Athanasopoulos, and Evangelos P Markatos. Alice, What Did You Do Last Time? Fighting Phishing Using Past Activity Tests. In *Proceedings of the 3rd European Conference on Computer Network Defense (EC2ND)*, pages 107–117, 2007.