

Luke Deshotels

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EDUCATION

NORTH CAROLINA STATE UNIVERSITY AUG 2013-PRESENT

Expected PhD, Computer Science, August 2018 G.P.A. 4.0/4.0
Research Focus - Evaluation of Access Control in iOS, Adviser - William Enck

UNIVERSITY OF LOUISIANA LAFAYETTE AUG 2006-MAY 2013

Master of Science, Computer Science, May 2013, Graduate G.P.A. 3.9/4.0
Bachelor of Science, Computer Science, December 2010, G.P.A. 3.7/4.0

INDUSTRY EXPERIENCE

ENGINEER INTERN, QUALCOMM SUMMERS 2015-16

LLVM optimizations to add security checks into executables during compilation
Automated detection and replacement of function pointer calls in C code
Systematic detection and evaluation of flaws in static analysis tools
Automatic static analysis for comparing modem binaries at function granularity

ACADEMIC EXPERIENCE

Lead Graduate Student - NCSU WSPR Lab	May 2017-Present
Graduate Research Assistant - William Enck	May 2014-Present
Graduate Research Assistant - Ahmad-Reza Sadeghi	Jan 2015-Feb 2015
Graduate Research Assistant - Purush Iyer	Jan 2014-May 2014
Graduate Research Assistant - Arun Lakhotia	May 2011-Aug 2013
Teaching Assistant - William Enck	Aug 2013 - Dec 2013
Teaching Assistant - Mark Radle	Aug 2011 - May 2011

CONFERENCE PUBLICATIONS

- [1] Luke Deshotels, Razvan Deaconescu, Costin Carabas, Iulia Manda, William Enck, Mihai Chiroiu, Ninghui Li, and Ahmad-Reza Sadeghi. iOracle: Automated Evaluation of Access Control Policies in iOS. In *Proceedings of the 2018 ACM on Asia Conference on Computer and Communications Security (AsiaCCS)*, Incheon, Korea, June 2018.
- [2] Luke Deshotels, Razvan Deaconescu, Mihai Chiroiu, Lucas Davi, William Enck, and Ahmad-Reza Sadeghi. SandScout: Automatic Detection of Flaws in iOS Sandbox Profiles. In *Proceedings of the ACM Conference on Computer and Communications Security (CCS)*, Vienna, Austria, October 2016.

JOURNAL PUBLICATIONS

- [1] Rui Shu, Peipei Wang, Sigmund A. Gorski III, Benjamin Andow, Adwait Nadkarni, Luke Deshotels, Jason Gionta, William Enck, and Xiaohui Gu. A Study of Security Isolation Techniques. *ACM Computing Surveys (CSUR)*, 2016.

BOOK CHAPTERS

- [1] Luke Deshotels. Application and Evaluation of Artificial Intelligence Algorithms for StarCraft. In Ashok Kumar, Jim Etheredge, and Aaron Boudreaux, editors, *Algorithmic and Architectural Gaming Design: Implementation and Development*, chapter 6, pages 107–133. IGI Global, Hershey, PA, USA, 2012.

WORKSHOP PUBLICATIONS

- [1] Luke Deshotels. Inaudible Sound as a Covert Channel in Mobile Devices. In *8th USENIX Workshop on Offensive Technologies (WOOT 14)*, San Diego, CA, USA, aug 2014.
- [2] Luke Deshotels, Vivek Notani, and Arun Lakhotia. Droidlegacy: Automated Familial Classification of Android Malware. In *Proceedings of ACM SIGPLAN on Program Protection and Reverse Engineering Workshop 2014*, San Diego, CA, USA, Jan 2014.

TECH REPORTS

- [1] Razvan Deaconescu, Luke Deshotels, Mihai Bucicoiu, William Enck, Lucas Davi, and Ahmad-Reza Sadeghi. SandBlaster: Reversing the Apple Sandbox. Technical Report arxiv:1608.04303, August 2016.

CVEs

- [1] CVE-2015-7001. Available from MITRE, CVE-ID CVE-2015-7001., 2015.
- [2] CVE-2016-4620. Available from MITRE, CVE-ID CVE-2016-4620., 2016.
- [3] CVE-2016-4664. Available from Apple, CVE-ID CVE-2016-4664., 2016.
- [4] CVE-2016-4665. Available from Apple, CVE-ID CVE-2016-4665., 2016.
- [5] CVE-2016-4686. Available from Apple, CVE-ID CVE-2016-4686., 2016.
- [6] CVE-2016-4719. Available from MITRE, CVE-ID CVE-2016-4719., 2016.

HONORS AND AWARDS

“Life Saving Hack”, Qualcomm HackMobile, 2015
The Dean’s Merit Award, NCSU, Fall 2013
Best Student Team, Cajun Codefest (\$10,000), 2012
Master’s Graduate Fellowship, University of Louisiana at Lafayette, Fall 2011
Outstanding Graduate, UL Lafayette Department of Sciences, Fall 2010 Student
Travel Grant (\$1,000), AsiaCCS, 2018

SERVICE

Scribe: Usenix Security 2018 Program Committee Meeting
Reviewer: TOPS 2017
Reviewer: MALCON 2014
Shadow PC: AsiaCCS 2017
Assistant Reviewer for William Enck: NDSS 2018
Assistant Reviewer for William Enck: CODASPY 2016
Assistant Reviewer for William Enck: NDSS 2016
Assistant Reviewer for William Enck: MoST 2015
Student Committee Member: NCSU CSC Department Head Selection, 2018
Volunteer: NCSU CSC PhD Recruitment 2014 - 2018
Volunteer: NC Math and Science Education Network (MSEN), Oct 2017
Volunteer: Students in Programming, Robotics and Computer Science, Oct 2017

PRESENTATIONS

- SandScout: Automatic Detection of Flaws in iOS Sandbox Profiles, CCS 2016, Vienna, Austria, October, 2016.
- iOS Access Control and Other More Interesting Projects, Qualcomm PhD Intern Research Series, San Diego, CA, June 2015.
- Inaudible Sound as a Covert Channel in Mobile Devices, 8th USENIX Workshop on Offensive Technologies, San Diego, CA, August 2014.
- Program Structure-Based Feature Selection for Android Malware Analysis, Usenix Security Poster Session, Bellevue, WA, August 2012 (poster presentation).

INVITED TALKS

- Automated Evaluation of Access Control in the iPhone Operating System, IBM Research, Yorktown, NY, March, 2018.
- Automated Evaluation of Access Control in the iPhone Operating System, Samsung Research America, Mountain View, CA, February, 2018.
- SandScout: Automatic Detection of Flaws in iOS Sandbox Profiles, University POLITEHNICA of Bucharest, Bucharest, Romania, October, 2016.

TUTORIALS

- Basics of IDA Pro, Qualcomm Product Security, San Diego, CA, July 2016.

PANELS

- Senior PhD Students Advising New PhD Students, NCSU CSC 801, Raleigh, NC, September 2017.