Aravind Machiry

CONTACT INFORMATION	University of California, Santa Barbara Department of Computer Science Santa Barbara, CA, 93106-5110	678-907-7128 machiry@cs.ucsb.edu

RESEARCH INTERESTS

Trusted Execution Environments, Program Analysis, Vulnerability detection, Operating systems, Fuzzing, Smartphone security.

EDUCATION

University of California, Santa Barbara, CA, USA

Ph.D., Computer Science, *Expected:* 2020
- Advisors: Christopher Kruegel, Ph.D and Giovanni Vigna, Ph.D

Georgia Institute of Technology, Atlanta, GA, USA

M.S., Information Security, 2013
- Advisor: Mayur Naik, Ph.D

R.V. College of Engineering, Bengaluru, KA, India

B.E., Computer Science, 2008

RESEARCH EXPERIENCE

Graduate Research Assistant   Sep 2014 to present
Department of Computer Science,
University of California, Santa Barbara
Supervisors: Christopher Kruegel, Ph.D and Giovanni Vigna, Ph.D

Graduate Research Assistant   Jan 2012 to May 2013
Department of Computer Science,
Georgia Institute of Technology.
Supervisor: Mayur Naik, Ph.D

WORK EXPERIENCE

Research Intern, Symantec Research Labs (SRL), LA   Jun 2018-Sep 2018
Developed static pointer and taint analysis techniques for different security applications.
Static vulnerability detection.

Software Security Engineer, Qualcomm R&D, San Diego   2013-2014
Fuzzing embedded subsystems like ARM TrustZone.
Using static type checkers to find multiple address space vulnerabilities.
Reviewing micro kernel design and implementation.
Code audit of Linux Kernel device drivers.

PUBLICATIONS

1. **Aravind Machiry**, N. Redini, E. Gustafson, Y. Fratantonio, Y. E. Choe, C. Kruegel and G. Vigna. "Using Loops For Malware Classification Resilient to Feature-unaware Perturbations." *Proceedings of the 34th Annual Application Security Application Conference (**ACSAC**)*, **2018**

2. A. Bianchi, Y. Fratantonio, **Aravind Machiry**, C. Kruegel, G. Vigna, S. Chung, W. Lee. "Broken Fingers: On the Usage of the Fingerprint API in Android." *Proceedings of the ISOC Network and Distributed System Security Symposium (**NDSS**)*, **2018**.

3. A. Bianchi, K. Borgolte, J. Corbetta, F. Disperati, A. Dutcher, J. Grosen, P. Grosen, **Aravind Machiry**, C. Salls, N. Stephens, G. Vigna, R. Wang (Authors listed alphabetically). "Mechanical Phish: Resilient Autonomous Hacking." *IEEE Security Privacy Magazine - **SPSI: Hacking without Humans 2018***.

4. Jake Corina, **Aravind Machiry**, Christopher Salls, Yan Shoshitaishvili, Shuang Hao, C. Kruegel, and G. Vigna. "DIFUZZING Android Kernel Drivers." *Black Hat Europe London, UK December (**BH EU**)*, **2017**.

5. Jake Corina, **Aravind Machiry**, Christopher Salls, Yan Shoshitaishvili, Shuang Hao, C. Kruegel, and G. Vigna. "DIFUZE: Interface Aware Fuzzing for Kernel Drivers." *Proceedings of the 24th ACM Conference on Computer and Communications Security (**CCS**)*, **2017**.

6. **Aravind Machiry**, C. Spensky, J. Corina, N. Stephens, C. Kruegel, G. Vigna. "DR.CHECKER: A Soundy Analysis for Linux Kernel Drivers." *Proceedings of the 26th USENIX Security Symposium (**USENIX Security**)*, **2017**.

7. N. Redini, **Aravind Machiry**, D. Das, Y. Fratantonio, A. Bianchi, E. Gustafson, Y. Shoshitaishvili, C. Kruegel, G. Vigna. "BootStomp: On the Security of Bootloaders in Mobile Devices." *Proceedings of the 26th USENIX Security Symposium (**USENIX Security**)*, **2017**.

8. **Aravind Machiry**, E. Gustafson, C. Spensky, C. Salls, N. D. Stephens, R. Wang, A. Bianchi, Y. E. Choe, C. Kruegel, G. Vigna. "BOOMERANG: Exploiting the Semantic Gap in Trusted Execution Environments." *Proceedings of the ISOC Network and Distributed System Security Symposium (**NDSS**)*, **2017**.

9. R. Wang, Y. Shoshitaishvili, A. Bianchi, **Aravind Machiry**, J. Grosen, P. Grosen, C. Kruegel, G. Vigna. "Ramblr: Making Reassembly Great Again." *Proceedings of the ISOC Network and Distributed System Security Symposium (**NDSS**)*, **2017**.

10. A. Bianchi, K. Borgolte, J. Corbetta, F. Disperati, A. Dutcher, J. Grosen, P. Grosen, **Aravind Machiry**, C. Salls, N. Stephens, G. Vigna, R. Wang (Authors listed alphabetically). "Cyber Grand Shellphish." ***Phrack***, **2017**.

11. Y. Fratantonio, **Aravind Machiry**, A. Bianchi, C. Kruegel, G. Vigna. "CLAPP: Characterizing Loops in Android Applications." *ACM Symposium on Foundations of Software Engineering (**FSE**)*, **2015**.

12. Y. Fratantonio, **Aravind Machiry**, A. Bianchi, C. Kruegel, G. Vigna. "CLAPP: Characterizing Loops in Android Applications (Invited Talk)." *Proceedings of the International Workshop on Software Development Lifecycle for Mobile (**DeMobile**)*, **2015**.

13. **Aravind Machiry**, Rohan Tahiliani, Mayur Naik. "Dynodroid: An Input Generation System for Android Apps." *ACM Symposium on Foundations of Software Engineering (**FSE**)*, **2013**.

PRESENTATION AND TALKS

1. Chris Salls, Yan Shoshitaishvili, Nick Stephens, Giovanni Vigna, and Christopher Kruegel. "Piston: Uncooperative Remote Runtime Patching." ***ACSAC 33** USA*, **2017**.

2. Y. Shoshitaishvili, A. Bianchi, K. Borgolte, J. Corbetta, F. Disparati, A. Dutcher, G. Vigna, **Aravind Machiry**, C. Salls, N. Stephens, F. Wang, J. Grosen. "Cyber Grand Shellphish." ***DEFCON 24** USA*, **2016**.

3. **Aravind Machiry**. "Million Dollar Baby: Towards ANGRly conquering DARPA CGC." ***nullcon** - International Security Conference*, **2016**.

HONORS AND AWARDS	Fellowships • **Symantec Research Labs Graduate Fellowship** 2018

HONORS AND
AWARDS

Fellowships
- **Symantec Research Labs Graduate Fellowship**   2018

Research Awards
- **CSAW Applied Research Finalist** for DIFUZE.   CSAW 2017
- **Internet Defense Prize Runner up** for DR.CHECKER. USENIX Security 2017
- **Distinguished Paper Award** for Ramblr.   NDSS 2017
- **Best Paper Award Award** for CLAPP.   Grad Workshop 2016
- **Distinguished Artifact Award** for Dynodroid.   FSE 2013

Student Awards — Georgia Institute of Technology
- College of Computing, **MS Research award**   2013

PROFESSIONAL
ACTIVITIES

- **Program Committee Member**, IEEE Symposium on Security and Privacy (S&P) Shadow PC, 2018.

- **Reviewer**, Journal of Information and Software Technology, 2017.

- **External Reviewer**, USENIX Security Symposium (SEC), 2017.

- **External Reviewer**, Network and Distributed System Security Symposium (NDSS), 2016.

TEACHING
EXPERIENCE

Teaching Assistant   Summer 2015
CS8 - Introduction to Computer Science
Instructor: Veronika Strnadova-Neeley
Division of Computer Science,
University of California, Santa Barbara.

REFERENCES

Christopher Kruegel   E-mail: chris@cs.ucsb.edu
Professor
Computer Science Department
University of California, Santa Barbara.

Giovanni Vigna   E-mail: vigna@cs.ucsb.edu
Professor
Computer Science Department
University of California, Santa Barbara.

Mayur Naik   E-mail: mhnaik@cis.upenn.edu
Associate Professor
Computer and Information Science
University of Pennsylvania.