

## Aravind Machiry

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| CONTACT INFORMATION | University of California, Santa Barbara<br>Department of Computer Science<br>Santa Barbara, CA, 93106-5110   | 678-907-7128<br>machiry@cs.ucsb.edu                              |
| RESEARCH INTERESTS  | Trusted Execution Environments, Program Analysis, Vulnerability detection, Operating systems, Fuzzing, Smartphone security.  |  |
| EDUCATION           | <b>University of California, Santa Barbara, CA, USA</b><br>Ph.D., Computer Science, <i>Expected: 2020</i> <ul style="list-style-type: none"><li>• Advisors: Christopher Kruegel, Ph.D and Giovanni Vigna, Ph.D</li></ul> <b>Georgia Institute of Technology, Atlanta, GA, USA</b><br>M.S., Information Security, 2013 <ul style="list-style-type: none"><li>• Advisor: Mayur Naik, Ph.D</li></ul> <b>R.V. College of Engineering, Bengaluru, KA, India</b><br>B.E., Computer Science, 2008   |  |
| RESEARCH EXPERIENCE | <b>Graduate Research Assistant</b><br>Department of Computer Science,<br>University of California, Santa Barbara<br>Supervisors: Christopher Kruegel, Ph.D and Giovanni Vigna, Ph.D<br><b>Research Intern, Symantec Research Labs (SRL), LA</b><br>Developed static pointer and taint analysis techniques for different security applications.<br>Static vulnerability detection.<br>Supervisor: Daniel Marino, Ph.D<br><b>Graduate Research Assistant</b><br>Department of Computer Science,<br>Georgia Institute of Technology.<br>Supervisor: Mayur Naik, Ph.D  | Sep 2014 to present<br>Jun 2018-Sep 2018<br>Jan 2012 to May 2013 |
| WORK EXPERIENCE     | <b>Software Security Engineer, Qualcomm R&amp;D, San Diego</b><br>Fuzzing embedded subsystems like ARM TrustZone.<br>Using static type checkers to find multiple address space vulnerabilities.<br>Reviewing micro kernel design and implementation.<br>Code audit of Linux Kernel device drivers.   | 2013-2014  |
| PUBLICATIONS        | <ol style="list-style-type: none"><li>1. <b>Aravind Machiry</b>, N. Redini, E. Gustafson, Y. Fratantonio, Y. E. Choe, C. Kruegel and G. Vigna. "Using Loops For Malware Classification Resilient to Feature-unaware Perturbations." <i>Proceedings of the 34th Annual Application Security Application Conference (ACSAC)</i>, <b>2018</b></li><li>2. H. Aghakhani, <b>Aravind Machiry</b>, S. Nilizadeh, C. Kruegel and G. Vigna. "Detecting Deceptive Reviews using Generative Adversarial Networks." <i>Proceedings of the 1st Deep Learning and Security Workshop (DLS)</i>, <b>2018</b>.</li><li>3. A. Bianchi, Y. Fratantonio, <b>Aravind Machiry</b>, C. Kruegel, G. Vigna, S. Chung, W. Lee. "Broken Fingers: On the Usage of the Fingerprint API in Android." <i>Proceedings of the ISOC Network and Distributed System Security Symposium (NDSS)</i>, <b>2018</b>.</li></ol> |  |

4. 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*.
5. 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.” *Chaos Communication Congress (34 C3)*, 2017.
6. 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.
7. 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.
8. **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.
9. 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.
10. **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.
11. 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.
12. 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.
13. 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.
14. 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.
15. **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. **Aravind Machiry**. “Unleashing D\_ on Android Kernel Drivers.” *nullcon - International Security Conference*, 2018.
2. Chris Salls, Yan Shoshitaishvili, Nick Stephens, Giovanni Vigna, and Christopher Kruegel. “Piston: Uncooperative Remote Runtime Patching.” *ACSAC 33 USA*, 2017.

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

HONORS AND AWARDS

Fellowships

- **UCSB Graduate Division Dissertation Fellowship** 2018
- **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** 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

Conferences

- **Program Committee Member**, IEEE Symposium on Security and Privacy (S&P) Shadow PC, 2018.
- **External Reviewer**, USENIX Security Symposium (SEC), 2017.
- **External Reviewer**, Network and Distributed System Security Symposium (NDSS), 2016.

Journals

- **Reviewer**, Artificial Intelligence Review, 2018.
- **Reviewer**, Journal of Information Security and Applications, 2018.
- **Reviewer**, Journal of Information and Software Technology, 2017. (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.