

Vadayath Jayakrishna Menon

PH.D. · COMPUTER SCIENCE

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Education

Arizona State University

Doctor of Philosophy in Computer Science

Arizona, USA

Aug 2019 - Current

- GPA: 4.0
- Research in Cyber Security

Amrita University

Bachelor of Technology in Computer Science and Engineering

Kerala, India

July 2014 - May 2018

- GPA: 9.27/10.0
- Graduated with Distinction

Research Experience

SEFCOM Lab at Arizona State University

Research Assistant

Arizona, USA

Aug 2019 - Current

- Working with Dr. Yan Shoshitaishvili and Dr. Ruoyu "Fish" Wang
- Research topics: Binary Exploitation, Fuzzing, Symbolic Execution, Static Binary Analysis, Reverse Engineering

ForAllSecure

Intern

Pennsylvania, USA

May 2022 - Aug 2022

- Worked with Thanassis Avgerinos and Maxwell Koo
- Worked on implementing a snapshot fuzzer for virtual machines

SEFCOM Lab at Arizona State University

Research Scholar

Arizona, USA

Oct 2018 - May 2019

- Worked under the supervision of Dr. Yan Shoshitaishvili and Dr. Ruoyu "Fish" Wang
- Analyzing binary application software for identifying vulnerabilities

ISI at University of Southern California

Research Scholar

California, USA

Feb 2018 - Oct 2018

- Worked under the supervision of Dr. Christophe Hauser
- Identifying potential leak of pointers through static binary analysis and symbolic execution

Research Publications

Operation Mango: Scalable Discovery of Taint-Style Vulnerabilities in Binary Firmware Services

Philadelphia, PA

33rd USENIX Security Symposium (USENIX Security 24)

2024

Wil Gibbs, Arvind S Raj, **Jayakrishna Menon Vadayath**, Hui Jun Tay, Justin Miller, Akshay Ajayan, Zion Leonahenahe Basque, Audrey Dutcher, Fangzhou Dong, Xavier Maso, Giovanni Vigna, Christopher Kruegel, Adam Doupé, Yan Shoshitaishvili, and Ruoyu Wang

"Watching over the shoulder of a professional": Why hackers make mistakes and how they fix them

San Francisco, CA

45th IEEE Symposium on Security and Privacy (S&P 24)

2024

Irina Ford, Ananta Soneji, Faris Bugra Kokulu, **Jayakrishna Vadayath**, Zion Leonahenahe Basque, Gaurav Vipat, Adam Doupé, Ruoyu Wang, Gail-Joon Ahn, Tiffany Bao, and Yan Shoshitaishvili,

Greenhouse: Single-Service Rehosting of Linux-Based Firmware Binaries in User-Space Emulation

Anaheim, CA

32nd USENIX Security Symposium (USENIX Security 23)

2023

Hui Jun Tay, Kyle Zeng, **Jayakrishna Menon Vadayath**, Arvind S Raj, Audrey Dutcher, Tejesh Reddy, Wil Gibbs, Zion Leonahenahe Basque, Fangzhou Dong, Zack Smith, Adam Doupé, Tiffany Bao, Yan Shoshitaishvili, and Ruoyu Wang

Arbiter: Bridging the Static and Dynamic Divide in Vulnerability Discovery on Binary Programs

Massachusetts, USA

31st USENIX Security Symposium (USENIX Security 22)

2022

Jayakrishna Vadayath, Moritz Eckert, Kyle Zeng, Nicolaas Weideman, Gokulkrishna Praveen Menon, Yanick Fratantonio, Davide Balzarotti, Adam Doupé, Tiffany Bao, Ruoyu Wang, Christophe Hauser and Yan Shoshitaishvili

Sleak: Automating Address Space Layout Derandomization

The 35th Annual Computer Security Applications Conference

Christophe Hauser, **Jayakrishna Menon**, Yan Shoshitaishvili, Ruoyu Wang, Giovanni Vigna and Christopher Kruegel

Puerto Rico, USA

2019

A binary analysis approach to retrofit security in input parsing routines

The Fifth Workshop on Language-Theoretic Security (IEEE CS Security & Privacy Workshops)

Jayakrishna Menon, Christophe Hauser, Yan Shoshitaishvili and Stephen Schwab

San Francisco, USA

2018

Professional Activities

ACM Conference on Computer and Communications Security

Artifact Evaluation Committee Member

Utah, USA

Oct 2024

18th USENIX WOOT Conference on Offensive Technologies (WOOT '24)

Artifact Evaluation Committee Member

Pennsylvania, USA

Aug 2024

Teaching Experience

CSE545: Software Security at Arizona State University

Teaching Assistant

- Assisted Dr. Ruoyu "Fish" Wang
- Primary duties were helping students with assignments and coursework

Arizona, USA

Aug 2021- Dec 2021

CSE365: Information Assurance at Arizona State University

Teaching Assistant

- Assisted Dr. Ruoyu "Fish" Wang
- Primary duties were helping students with assignments and coursework

Arizona, USA

Aug 2020- Dec 2020

Projects

Arbiter

A scalable and precise hybrid vulnerability analysis framework

- A hybrid vulnerability analysis framework that can be used to vulnerabilities that satisfy a given vulnerability description in binaries in a scalable and precise manner.
- Source code available on GitHub

PuzzIL

An intermediate language fuzzer for PHP

- An intermediate language fuzzer for the PHP JIT engine based on top of PhplL.
- Found 2 bugs in the JIT engine of PHP 8.0
- Source code available on GitHub

Vulnerability Research

2023 **Wyze Camera 0-day**, Pwn2Own

2022 **Synology NAS 0-day**, Pwn2Own

2018 **CVE-2018-18311**, Heap overflow in Perl interpreter, CVSS 3.0 score: 9.8

Vancouver

Vancouver

Extracurricular Activities

2024 **Small Business Track Competition Winners with Shellphish**, DARPA AI Cyber Challenge

2023 **11th rank globally with team Shellphish**, DEFCON CTF Finals

2022 **13th rank globally with team Shellphish**, DEFCON CTF Finals

2021 **10th rank globally with team Shellphish**, HITB Pro CTF

2020 **7th rank globally with team Shellphish**, DEFCON CTF Finals

2019 **11th rank globally with team Pwndevils**, Dragon CTF

2019 **First runners up with team Pwndevils**, CSAW Embedded Security Challenge

2016 **First runners up with team bi0s**, CSAW CTF 2016 (India)

Las Vegas, USA

Las Vegas, USA

Abu Dhabi, UAE

Las Vegas, USA

Warsaw, Poland

New York, USA

Uttar Pradesh, India