SeyedHamed Ghavamnia

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Education

 Ph.D. in Computer Science Stony Brook University Thesis: Attack Surface Reduction through System Call Filtering Advisor: Michalis Polychronakis 	08/2017 - 05/2023
 M.S. in Information Technology Engineering Sharif University of Technology Thesis: Traffic Analysis for Packets Encrypted at the IP Level Advisor: Mehdi Kharrazi 	09/2009 - 12/2011
B.E. in Information Technology Engineering University of Isfahan	09/2005 - 08/2009

Work Experience

08/2023 – present
05/2018 - 05/2023
05/2022 - 08/2022
05/2021 - 08/2021
08/2013 - 08/2017
12/2011 - 08/2013

Teaching

University of ConnecticutOutput• CSE4100: Programming Language Translations, Spring 2024• CSE5095: Special Topics in Computer Science and Engineering, Fall 2023• Caching Assistant Department of Computer Science - Stony Brook University• 09/2017 - 05/2018• Computer Security Fundamentals, Fall 2017• System Fundamentals, Spring 2018Lecturer - Faiz al-Islam Institute of Higher Education• 01/2015 - 12/2015• Fundamentals of Computer Networks, Spring & Fall 2015• 09/2010 - 05/2011Teaching Assistant - Sharif University of Technology• 09/2010 - 05/2011• Advanced Computer Networks, Fall 2010• Advanced Computer Security, Spring 2011

Peer-Reviewed Publications

Journal

 Maryam Rostamipoor, Seyedhamed Ghavamnia, and Michalis Polychronakis. Confine: Fine-grained System Call Filtering for Container Attack Surface Reduction Computers & Security (2023): 103325. **Conference Proceedings**

- Seyedhamed Ghavamnia, Tapti Palit, and Michalis Polychronakis.
 C2C: Fine-grained Configuration-driven System Call Filtering
 In Proceedings of the 29th ACM SIGSAC Conference on Computer and Communications Security (CCS),
 November 2022.
- Md Mehedi Hasan, Seyedhamed Ghavamnia, and Michalis Polychronakis.
 Decap: Deprivileging programs by reducing their capabilities.
 In Proceedings of the 25th International Symposium on Research in Attacks, Intrusions and Defenses (RAID), October 2022.
- 3. Seyedhamed Ghavamnia, Tapti Palit, Azzedine Benameur and Michalis Polychronakis. Confine: Automated System Call Policy Generation for Container Attack Surface Reduction In Proceedings of the 23rd International Symposium on Research in Attacks, Intrusions and Defenses (RAID), October 2020.
- 4. **Seyedhamed Ghavamnia**, Tapti Palit, Shachee Mishra and Michalis Polychronakis. **Temporal System Call Specialization for Attack Surface Reduction** In Proceedings of the 29th USENIX Security Symposium, August 2020.
- Sergej Proskurin, Marius Momeu, Seyedhamed Ghavamnia, Vasileios Kemerlis and Michalis Polychronakis. xMP: Selective Memory Protection for Kernel and User Space In Proceedings of the 41st IEEE Symposium on Security and Privacy (S&P), May 2020.
- Nguyen Phong Hoang, Ivan Lin, Seyedhamed Ghavamnia, Michalis Polychronakis K-Resolver: Towards Decentralizing Encrypted DNS Resolution 2nd NDSS Workshop on Measurements, Attacks, and Defenses for the Web (MADWeb), February 2020.
- 7. Mohammadhosein Mirshahjafar, **Seyedhamed Ghavamnia**. **Classifying IDS Alerts Automatically for use in Correlation Systems** In Proceedings of the 11th International ISC Conference, 2014.

Workshops

 Hyungjoon Koo, Seyedhamed Ghavamnia, and Michalis Polychronakis. Configuration-Driven Software Debloating In Proceedings of the 12th European Workshop on System Security (EuroSec), March 2019.

Tutorials

 Tutorial on Multi-phased Confine - Software Security Summer School Created hands-on exercises for multi-phase system call filtering Taught how to improve container hardening by considering its phases of execution 	11/2021
Tutorial on Confine - Software Security Summer School • Created hands-on step-by-step exercises for Confine	08/2020
• Participants were more than 50 software engineer and security architects	
Taught how to harden their container ecosystem through applying Confine	
Posters, Presentations, and Talks	
C2C: Fine-grained Configuration-driven System Call Filtering • CCS 2022, Los Angeles, CA	11/2022
Decap: Deprivileging Programs by Reducing their Capabilities • RAID 2022, Limassol, Cyprus	10/2022
Temporal System Call Specialization for Attack Surface Reduction (<i>Poster</i>) • Usenix Security Symposium, Boston, MA	8/2022
Temporal System Call Specialization for Attack Surface Reduction • Georgia Tech Institute for Information Security & Privacy, Atlanta, GA (<i>Online</i>)	10/2020
Confine: Automated System Call Policy Generation for Container Attack Surface Reduction • RAID 2020, San Sebastien, Spain (<i>Online</i>)	10/2020
Temporal System Call Specialization for Attack Surface Reduction • Usenix Security Symposium, Boston, MA (<i>Online</i>)	8/2020
Automated System Call Policy Generation for Container Attack Surface Reduction • Stony Brook University Research Proficiency Exam, Stony Brook, NY	7/2019

Grants & Awards

- 2018: IEEE Security and Privacy Conference Student Travel Grant
- 2017: Stony Brook CS Chairman's Fellowship
- 2011: National CTF Contest Ranked among top 5 teams

Service

Program Committees

- IEEE Symposium on Security and Privacy (S&P), 2025.
- Annual Computer Security Applications Conference (ACSAC), 2024.
- Information Security Conference (ISC), 2024.

Reviewer

- Conference on Data and Applications Security and Privacy External Reviewer (DBSec'23)
- IEEE Internet of Things Journal
- Journal of Supercomputing
- OSDI 2020 Artifact Evaluation Committee Member
- IEEE S&P 2021 External Reviewer
- IEEE S&P 2020 Shadow PC Member
- CCS 2020 External Reviewer
- RAID 2019 External Reviewer

Student Committee Member

- Iranian Graduate Student Association Treasurer (2018-2021)
- Member of the Central Student Scientific Association, Isfahan University, 2005-2008