

# SyedHamed Ghavamnia

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<https://shamedgh.github.io>

<https://scholar.google.com/citations?user=6Zldz1MAAAAJ&hl=en>

## Education

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

## Work Experience

Assistant Professor <b>School of Computing - University of Connecticut</b>	08/2023 – present
Research Assistant <b>Hexlab, Stony Brook University</b> (Advisor: Prof. Michalis Polychronakis)	05/2018 – 05/2023
Software Engineering Intern <b>CTO Office, Bloomberg</b> (Mentor: Peter Martin, Manager: Julien Vanegue)	05/2022 – 08/2022
Software Engineering Intern <b>CTO Office, Bloomberg</b> (Mentor: Jatin Kataria, Manager: Julien Vanegue)	05/2021 – 08/2021
Technical Team Lead <b>Irisa Company</b>	08/2013 – 08/2017
Software Engineer <b>Irisa Company</b>	12/2011 – 08/2013

## Teaching

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

## Peer-Reviewed Publications

- **Syedhamed 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, **Syedhamed 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.
- **Syedhamed 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.
- **Syedhamed 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, **Syedhamed 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, **Syedhamed Ghavamnia**, Michalis Polychronakis  
**K-Resolver: Towards Decentralizing Encrypted DNS Resolution**  
2nd NDSS Workshop on Measurements, Attacks, and Defenses for the Web (MADWeb), February 2020.
- Hyungjoon Koo, **Syedhamed Ghavamnia**, and Michalis Polychronakis.  
**Configuration-Driven Software Debloating**  
In Proceedings of the 12th European Workshop on System Security (EuroSec), March 2019.
- Mohammadhosein Mirshahjafar, **Syedhamed Ghavamnia**.  
**Classifying IDS Alerts Automatically for use in Correlation Systems**  
In Proceedings of the 11th International ISC Conference, 2014.

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## Tutorials

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| Tutorial on Multi-phased Confine - Software Security Summer School   | 11/2021 |
| <ul style="list-style-type: none"> <li>• Created hands-on exercises for multi-phase system call filtering</li> <li>• Taught how to improve container hardening by considering its phases of execution</li> </ul>   |         |
| Tutorial on Confine - Software Security Summer School  | 08/2020 |
| <ul style="list-style-type: none"> <li>• Created hands-on step-by-step exercises for Confine</li> <li>• Participants were more than 50 software engineer and security architects</li> <li>• Taught how to harden their container ecosystem through applying Confine</li> </ul> |         |

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## Posters, Presentations, and Talks

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| C2C: Fine-grained Configuration-driven System Call Filtering   | 11/2022 |
| <ul style="list-style-type: none"> <li>• CCS 2022, Los Angeles, CA</li> </ul>  |         |
| Decap: Deprivileging Programs by Reducing their Capabilities   | 10/2022 |
| <ul style="list-style-type: none"> <li>• RAID 2022, Limassol, Cyprus</li> </ul>  |         |
| Temporal System Call Specialization for Attack Surface Reduction ( <i>Poster</i> )   | 8/2022  |
| <ul style="list-style-type: none"> <li>• Usenix Security Symposium, Boston, MA</li> </ul>  |         |
| Temporal System Call Specialization for Attack Surface Reduction   | 10/2020 |
| <ul style="list-style-type: none"> <li>• Georgia Tech Institute for Information Security &amp; Privacy, Atlanta, GA (<i>Online</i>)</li> </ul> |         |
| Confine: Automated System Call Policy Generation for Container Attack Surface Reduction  | 10/2020 |
| <ul style="list-style-type: none"> <li>• RAID 2020, San Sebastien, Spain (<i>Online</i>)</li> </ul>  |         |
| Temporal System Call Specialization for Attack Surface Reduction   | 8/2020  |
| <ul style="list-style-type: none"> <li>• Usenix Security Symposium, Boston, MA (<i>Online</i>)</li> </ul>                                      |         |
| Automated System Call Policy Generation for Container Attack Surface Reduction   | 7/2019  |
| <ul style="list-style-type: none"> <li>• Stony Brook University Research Proficiency Exam, Stony Brook, NY</li> </ul>                          |         |

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## 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
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## Service

### 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
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