

# AMIT SEAL AMI

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## EDUCATION

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### William & Mary

Ph.D. Student (*Expected Graduation May 2025*)

Advisors: [Dr. Adwait Nadkarni](#) and [Dr. Denys Poshyvanyk](#)

*August 2018 - Present*

### Institute of Information Technology, University of Dhaka


- M.Sc. in Software Engineering *2013-2014*  
*Advisor: Dr. Md. Shariful Islam*
- Bachelors in Information Technology, Major in Software Engineering *2009-2012*

## PUBLICATIONS [[Google Scholar](#)] [[Full Texts](#)]

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**Note:** Within the domain of Computer Security, the following conferences are considered **Top-Tier<sub>T1</sub>** venues: the IEEE Symposium on Security & Privacy (S&P), the USENIX Security Symposium (USENIX), the ACM Conference on Computer and Communications Security (CCS), and the ISOC Network and Distributed Systems Security Symposium (NDSS). For Software Engineering, the Automated Software Engineering Conference (ASE), the European Software Engineering Conference/ ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE) and the International Conference on Software Engineering (ICSE) are considered **Top-Tier<sub>T1</sub>** venues. Further, the ACM Transactions on Privacy & Security (TOPS) and ACM Transactions on Software Engineering and Methodology (TOSEM) are **Premier Journals<sub>Tj</sub>** in Security and Software Engineering respectively.

### Proceedings/Conference Publications

- ‘False negative - that one is going to kill you’ - Understanding Industry Perspectives of Static Analysis based Security Testing, **A. S. Ami**, K. Moran, D. Poshyvanyk, A. Nadkarni, in *IEEE Symposium on Security and Privacy (S&P)<sub>T1</sub>* [ *Distinguished Paper Award*] *2024*
- ‘Belt and suspenders’ or ‘just red tape’?: Investigating Early Outcomes and Perceptions of IoT Security Compliance Enforcement, P. Mandal, **A. S. Ami**, V. Olaiya, S. Razmjo, A. Nadkarni in *USENIX Security Symposium (USENIX)<sub>T1</sub>* *2024*
- Why Crypto-detectors Fail: A Systematic Evaluation of Cryptographic Misuse Detection Techniques, **A. S. Ami**, N. Cooper, K. Kafle, K. Moran, D. Poshyvanyk, A. Nadkarni, in *IEEE Symposium on Security and Privacy (S&P)<sub>T1</sub>* *2022*
- MobiCoMonkey: Context Testing of Android apps, **A.S. Ami**, Md. Hasan, Md. R. Rahman, K. Sakib; *MOBILESoft’18: Proceedings of the 5th International Conference on Mobile Software Engineering and Systems, co-located with (ICSE)<sub>T1</sub>* *2018*

### Journal Publications

- Systematic Soundness Evaluation of Security focused Android Static Analysis Tools, **A. S. Ami**, K. Kafle, K. Moran, A. Nadkarni, D. Poshyvanyk; in *ACM Transactions on Privacy and Security (TOPS)<sub>Tj</sub>* *2021*

### Short Papers/Tool Demonstrations/Others

- Systematically Evaluating Static Analysis-Based Security Testing Tools - The Gaps within Design and Practice, **A. S. Ami** in *Proceedings of the ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering - Doctoral Symposium (ESEC/FSE) <sub>T1</sub>* *2023*
- MASC: A Tool for Mutation-Based Evaluation of Static Crypto-API Misuse Detectors, **A. S. Ami**, et al. in *Proceedings of the ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering - Demonstrations track (ESEC/FSE) <sub>T1</sub>* *2023*
- μSE: Mutation-based Evaluation of Security-focused Static Analysis Tools for Android, **A. S. Ami**, K. Kafle, K. Moran, A. Nadkarni, D. Poshyvanyk; *Formal Tool Demonstration, International Conference on Software Engineering (ICSE) <sub>T1</sub>* *2021*

## PROFESSIONAL EXPERIENCE

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### Academia

- Instructor of Record, William & Mary, USA 2023
- Lecturer at IIT, University of Dhaka, Bangladesh 2015-2018

### Industry

- Commonwealth of Virginia Engineering and Science (COVES) **Policy Fellow** at Joint Commission on Technology and Science (JCOTS), a permanent legislative agency of Commonwealth of Virginia 2022
- Software Engineer at IMS Dhaka (M&H Informatics Ltd.), Bangladesh 2014
- IT Consultant at Southtech Limited, Bangladesh (*Intern*) 2011

## AWARDS

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- **International Student Achievement Award**, William & Mary 2024
- **Best Poster Award** at William & Mary CS Symposium 2023
- **Coastal Virginia Center for Cyber Innovation Cybersecurity Dissertation Fellowship** 2021-23
- Graduate Studies and **Research Fellowship** from *William & Mary* 2018-19
- ICT Fellowship, Bangladesh (*equivalent of NSF Graduate Research Fellowship*) 2013-14
- Drik ICT Innovative Idea Award from *Microsoft Imagine Cup Bangladesh* 2012  
*Team Members: A. S. Ami, A. U. Gias, A. Imran and Md. R. Rahman*

### Travel Awards from Top-Tier Conferences

- IEEE Symposium on Security & Privacy (**S&P**) Student Travel Award 2022
- Network and Distributed Systems Security Symposium (**NDSS**) Student Travel Award 2022
- IEEE Symposium on Security & Privacy (**S&P**) Student Travel Award 2021
- Network and Distributed Systems Security Symposium (**NDSS**) Student Travel Award 2021
- ACM **CCS** Student Travel Award from ACM iMentor Workshop 2020

## GRANTS

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ICT Innovation Fund, Bangladesh - *Equivalent of NSF Award* 2015-16  
PI: Dr. K. Sakib, Co-PI: **A. S. Ami**, Md. R. Rahman

## SERVICE

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### Journal Reviewer

- ACM Transactions on Software Engineering and Methodology (**TOSEM**) **Tj** 2024
- ACM Transactions on Software Engineering and Methodology (**TOSEM**) **Tj** 2023

### Invited/Additional Technical Program Committee Member

- IEEE Symposium on Security and Privacy (**S&P**) **T1** Program Committee 2025
- USENIX Security Symposium (**USENIX**) **T1** Artifact Evaluation Committee 2023
- USENIX Security Symposium (**USENIX**) **T1** Artifact Evaluation Committee 2022
- USENIX Security Symposium (**USENIX**) **T1** Artifact Evaluation Committee 2021
- USENIX Security Symposium (**USENIX**) **T1** Artifact Evaluation Committee 2020
- International Conference on Automated Software Engineering (**ASE**) **T1** 2021
- International Conference on Software Engineering (**ICSE**) **T1** Tool Demonstrations Track 2021
- Annual Computer Security Applications Conference (**ACSAC**) Artifact Evaluation Committee 2024
- Annual Computer Security Applications Conference (**ACSAC**) Artifact Evaluation Committee 2023
- Annual Computer Security Applications Conference (**ACSAC**) Artifact Evaluation Committee 2022
- Symposium on Usable Privacy and Security (**SOUPS**) Posters 2024

### External/Sub Reviewer (Security)

- IEEE Symposium on Security and Privacy (**S&P**) **T1** 2024
- Network and Distributed System Security (NDSS) Symposium(**NDSS**) **T1** 2024
- IEEE Symposium on Security and Privacy (**S&P**) **T1** 2023
- Network and Distributed System Security (NDSS) Symposium(**NDSS**) **T1** 2023
- Network and Distributed System Security (NDSS) Symposium(**NDSS**) **T1** 2022
- USENIX Security Symposium (**USENIX**) **T1** 2021
- Network and Distributed System Security (NDSS) Symposium(**NDSS**) **T1** 2021
- Annual Computer Security Applications Conference (**ACSAC**) 2023

### External/Sub Reviewer (Software Engineering)

- International Conference on Applied Cryptography and Network Security (**ACNS**) 2024
- International Conference on Software Engineering (**ICSE**) **T1** 2022
- ACM Transactions on Software Engineering and Methodology (**TOSEM**) **Tj** 2022
- International Conference on Automated Software Engineering (**ASE**) **T1 T1** 2022
- International Conference on Mobile Software Engineering and Systems (MobileSoft) 2022
- International Conference on Automated Software Engineering (**ASE**) **T1** 2021
- ACM Transactions on Software Engineering and Methodology (**TOSEM**) **Tj** 2021
- International Conference on the Foundations of Software Engineering (**FSE**) **T1 T1** 2021
- International Conference on Software Maintenance and Evolution (ICSME) 2020
- International Conference on Automated Software Engineering (**ASE**) **T1** 2020

### Conference Organization

- **Session Chair**, IEEE Symposium on Security and Privacy (**S&P**) **T1** 2024
- **Graduate Panelist** at the *W&M* CS Symposium 2023
- **Web Chair, Graduate Panelist** and Volunteer at the *W&M* CS Symposium 2022

### Other Academic Contributions

- **Outlined *Cyber Criminology* Course**, PGD in CyberSecurity, Police Staff College, Bangladesh 2022
- Designed and implemented the *International Scholars Integration in Research and Academic Activities* Framework at IIT, University of Dhaka, jointly with SPL, SEMERU Research Labs, *W&M* 2022

### Other Contributions

- **Organization Committee**, TribeCTF - Capture The Flag Cybersecurity Competition, *W&M* 2024
- **Judge**, &Hacks Hackathon, *W&M* 2024

### INVITED TALKS/WORKSHOPS

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- *Interviewing Techniques for Qualitative Research Tutorial*, for the Secure Platforms Lab and Vehicle Computing Lab, **William & Mary** 2024
  - *Vulnerability Analysis Tutorial and Workshop*, **William & Mary** 2024
  - *Exploring the Gaps in Design and Practice of Static Analysis Tools for Software Security*, **University of Central Florida**, Host: Kevin Moran 2024
  - *Exploring the Gaps in Design and Practice of Static Analysis Tools for Software Security*, DMV Security Workshop - Lightning Talks Series, **University of Virginia** 2024
  - *Security and Privacy Policy Suggestions for Virginia*, COVES Fellowship Research, Host: Joint Commission on Technology and Science, presided by *Delegate C.E. Cliff Hayes, Jr.* 2022
  - *Vulnerability Analysis Tutorial and Workshop*, **William & Mary** 2022
  - *Why Crypto-detectors Fail: A Systematic Evaluation of Cryptographic Misuse Detection Techniques*, Software Engineering Seminar Series, **George Mason University**, Host: Kevin Moran 2021

- *Higher Studies: Getting started from Undergrad*, Web Seminar, **Stamford University, Bangladesh** 2021
- *Vulnerability Analysis Tutorial and Workshop*, **William & Mary** 2020
- *Higher Studies and Research*, Web Seminar, **Daffodil International University, Bangladesh** 2020

## TEACHING

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### **Instructor of Record at W&M**

- CSCI 140 - Programming for Data Science *Fall 2023*

### **Project Manager at W&M & IIT DU**

- Enhancing the MASC Framework for evaluating Static Crypto-API misuse detectors *Fall 2022*

### **Project Manager (CSCI 635) at W&M**

- Extending the MASC Framework for evaluating Static Crypto-API misuse detectors *Spring 2022*

### **Project Manager (CSCI 435) at W&M**

- Enhancing Mutation Analysis for evaluating Static Crypto-API misuse detectors Framework *Fall 2021*
- Web application for displaying and executing home automation events generated by Helion (*with Sunil Manandhar*) *Fall 2021*
- Enhancing the Evaluation of Android Static Analysis Tools with  $\mu$ SE *Fall 2020*
- Evaluating Android Static Analysis Tools with  $\mu$ SE *Fall 2019*

### **Guest Lecturer at W&M**

- Mobile Application Security (CSCI 445) at *William & Mary* *Spring 2024*  
*Taught: Cryptographic API Misuse in the Wild (Jointly with Prianika Mandal)*
- IoT Security (CSCI 780) at *William & Mary* *Fall 2023*  
*Topic: 'False negative - that one is going to kill you' - Understanding Industry Perspectives of SAST*
- Concepts of Computer Security (CSCI 667) at *William & Mary* *Spring 2023*  
*Taught: Security certification of IoT-mobile apps and their Compliance*
- Mobile Application Security (CSCI 445) at *William & Mary* *Fall 2022*  
*Taught: Unsoundness, Mutation Testing Techniques for evaluating Crypto-Detectors*
- Mobile Application Security (CSCI 445) at *William & Mary* *Fall 2022*  
*Taught: Cryptographic API Misuse in the Wild (Jointly with Prianika Mandal)*
- Mobile Application Security (CSCI 445) at *William & Mary* *Fall 2021*  
*Taught: Unsoundness, Mutation Testing Techniques for evaluating Crypto-Detectors*
- Mobile Application Security (CSCI 420) at *William & Mary* *Fall 2020*  
*Taught: Unsoundness, Mutation based Evaluation of Data Leak Detectors*

### **Lecturer (Instructor of Record) at IIT, University of Dhaka**

- MSSE 1002: Formal Methods and Models in Software Engineering *2018*
- MSSE 1002: Formal Methods and Models in Software Engineering *2017*
- MSSE 1044: Software Analytics *2017*
- SE 843: Software Metrics *2017*
- PGD 207: Mobile Applications *2017*
- MSSE 1002: Formal methods and Models in Software Engineering *2016*