

Sazzadur Rahaman

PHD CANDIDATE · SECURITY ENTHUSIAST

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Summary

PhD Student in CS@VT, interested in **Cryptography, Program Analysis, Security and Privacy**. **3.5+ years of industry experience** in OOP, AOP and **JavaEE technologies**, Smart card and payment based solutions. Founding member and initiator of JUG BD (Java User Group, Bangladesh). **Speaker in JavaOne-2015**, JUG BD Meetup (3.0 & 5.0). Answered 190+ questions with **5300+ reputation** in stackoverflow (top 8% overall). Authored 4 technical papers in diverse areas (e.g., cryptography, program analysis, graph theory, etc.). First recipient of **Bitshare fellowship** for blockchain research in CS@VT.

Education

VT (Virginia Tech)

Blacksburg, VA

PHD CANDIDATE (4th YEAR) IN COMPUTER SCIENCE

2015 - PRESENT

- CGPA: 3.94/4, Advisor: Danfeng (Daphne) Yao. **[2 conference papers, 2 posters, 1 tutorial]**
- **Research Focus:** Minimizing the gap between theory and the applications of cryptographic schemes and protocols (e.g., Group signatures) for wide adoption. Building various tools for detection and prevention of cryptographic misuses.

BUET (Bangladesh University of Engineering and Technology)

Dhaka, Bangladesh

B.S. IN COMPUTER SCIENCE AND ENGINEERING

2006 - 2010

- CGPA: 3.64/4, Advisor: Md. Saidur Rahman. **[2 conference papers, 1 newsletter]**
- **Research Focus:** Solving theoretical problems in the area of graph theory (e.g., graph drawing, anti-bandwidth problem, etc.).

Publication

CONFERENCE PAPERS

- [Sazzadur Rahaman](#), Danfeng (Daphne) Yao. "Program Analysis of Cryptography Implementations for Security." 2017 IEEE Secure Development Conference (**SecDev'17**). Cambridge, MA, USA. September, 2017.
- [Sazzadur Rahaman](#), Long Cheng, Danfeng (Daphne) Yao, He Li, and Jung-Min (Jerry) Park. "Provably Secure Anonymous-yet-Accountable Crowdsensing with Scalable Sublinear Revocation." 17th Privacy Enhancing Technologies Symposium (**PETS'17**). Minneapolis, MN, USA. July, 2017.
- [Sazzadur Rahaman](#), Tousif Ahmed Eshan, Sad Al Abdullah. "Antibandwidth Problem for Itchy Caterpillars." 2014 International Conference on International Conference on Informatics, Electronics & Vision (**ICIEV'14**). Dhaka, Bangladesh. May, 2014.
- Mohammad Raihanul Islam, [Sazzadur Rahaman](#), Rakibul Hasan, Ridwan Rashid Noel, Asif Salekin, and Hasan Shahid Ferdous. "A Novel Approach for Constructing Emulator for Microsoft Kinect XBOX 360 Sensor in the .NET Platform." 4th International Conference on Intelligent Systems Modelling & Simulation (**ISMS'13**). Bangkok, Thailand. January, 2013.

POSTERS AND TUTORIALS

- [Sazzadur Rahaman](#), Na Meng and Danfeng (Daphne) Yao. "Tutorial: Principles and Practices of Secure Crypto Coding In Java" (90 minutes Tutorial). 2018 IEEE Secure Development Conference (**SecDev'18**). Cambridge, MA, USA. September, 2018.
- [Sazzadur Rahaman](#), Long Cheng, Danfeng (Daphne) Yao, He Li, and Jung-Min (Jerry) Park. "Enabling Large-scale Anonymous-yet-Accountable Crowdsensing" (Poster). 2017 IEEE Secure Development Conference (**SecDev'17**). Cambridge, MA, USA. September, 2017.
- [Sazzadur Rahaman](#), Long Cheng, He Li, Danfeng (Daphne) Yao and Jung-Min (Jerry) Park. "GroupSense: Scalable Crowdsensing with Privacy and Accountability." (Poster). **USENIX Security'16**. Austin, TX. August, 2016.

Experience

Computer Science, Virginia Tech

Blacksburg, VA

GRADUATE RESEARCH ASSISTANT [PROF. DANFENG (DAPHNE) YAO]

Aug'15 - May'17 | Aug'17 - PRESENT

- Scalable anonymous-yet-accountable crowdsensing using a new VLR-based group signature scheme. **[C/C++, JavaEE, Gatling, Android]**
- Tools for detecting/preventing crypto-vulnerabilities large scale programs (C/C++, Java). **[Java, C/C++, LLVM, Clang, Soot]**

Data Security Technologies, LLC (BigData Security Startup)

Dallas, TX

SOFTWARE ENGINEER INTERN

May'17 - Aug'17

- Significant contribution in architecture level design, development and performance tuning/optimization of PrivateMR. PrivateMR is a solution to enforce on-the-fly data protection (obfuscation, encryption) policies in Hadoop and Spark infrastructure.
- Utilized previous experience to standardize software engineering practices and tools.
- **Notable Tools:** **[Spark, Hadoop, Spring, Scala, Python, Bash script.]**

Kona Software Lab Ltd

Dhaka, Bangladesh

SOFTWARE ENGINEER AND SCRUMMASTER

Mar'14 - Jul'15

- Significant contribution in architecture level design and development of crucial products (e.g., Kona Pay [\[news\]](#), Kona HCE, TSM etc.).
- Read various specs for smart card and secured solutions (GlobalPlatform, ISO/IEC, ETSI, Visa, MasterCard, American Express, EMVCo, etc.) and applied them to build products of global standards.
- Significant contribution in standardizing software engineering practices and tools effectively throughout the organization.
- **Notable Tools:** **[Servlet, JSP, Spring, JMS, Hibernate, Oracle, Android, Gradle.]**

Therap Services, LLC

Dhaka, Bangladesh

SOFTWARE ENGINEER

Apr'12 – Feb'14

- Worked in different roles: feature implementation, realtime system performance monitoring, analysis and optimization to peer code reviewing.
- Wrote utility framework for generic spread sheet generation, which helped to cut down around 90% of the related boilerplate codes.
- **Notable Tools:** [Servlet, JSP, JSF, JMS, EJB, CDI, Seam Framework, Spring, Hibernate, Oracle, Ant, Maven, Gradle.]

Professional Services

Journal Reviewer, IEEE Transactions on Dependable and Secure Computing (TDSC)

Conference Reviewer (External), SecDev'18, PETS'19

Notable Talks

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| 2018 | “Tutorial: Principles and Practices of Secure Crypto Coding In Java” , SecDev'18. | Cambridge, MA |
| 2017 | “Program Analysis of Cryptography Implementations for Security” , SecDev'17. | Cambridge, MA |
| 2017 | “Enabling Large-scale Anonymous-yet-Accountable Crowdsensing” , PETS'17. | Minneapolis, MN |
| 2015 | “Smart Card to the Cloud for Convenient, Secured NFC Payment” , JavaOne'15. | San Francisco, CA |
| 2015 | “Languages in JVM Ecosystem and The future of JVM” , Java User Group, Bangladesh (Meetup 5.0). | Dhaka, Bangladesh |
| 2014 | “Antibandwidth problem for itchy caterpillar” , Int. Conf. on Informatics, Electronics & Vision (ICIEV). | Dhaka, Bangladesh |

Extracurricular Activity

Founding Member and Initiator, Java User Group, Bangladesh (JUGBD)

Member (200+ posts with 5300+ Reputation), StackOverflow

Honors & Awards

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| 2018 | Bitshare Fellowship , Fall 2018 and Spring 2019 | Virginia Tech |
| 2017 | Student Travel Award , ACM Conference on Computer and Communications Security (CCS) | Dallas, TX |
| 2017 | Virginia Tech Travel Award , IEEE Secure Development Conference (SecDev) | Cambridge, MA |
| 2017 | Virginia Tech Travel Award , Privacy Enhancing Technologies Symposium (PETS) | Minneapolis, MN |
| 2016 | Virginia Tech Travel Award , USENIX Security | Austin, TX |
| 2014 | Certified Scrum Master (CSM) , by Scrum Alliance | Valid until Jan. 2017 |
| 2011 | Champion in .Net platform , Inter University System Design Competition-2011, BUET | Dhaka, Bangladesh |

Reference

Available upon request.