

Muhammad Sajidur **Rahman**

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Profile Summary

- Goal oriented, team player, problem-solver.
- Research interests: **Software and Distributed Systems Security, Deep Learning, Human-centered Security and Privacy Design.**
- 3.5+ years of extensive working experience as a Software Engineer in **Fintech** industry, **SaaS** in general.
- Ready to hit the ground running and produce results.

Education

University of Florida

PHD STUDENT, DEPT. OF COMPUTER SCIENCE

Gainesville, FL

2017 - Present

Kansas State University

M.S. IN COMPUTER SCIENCE

Manhattan, KS

Graduated in May, 2017

- **MS Thesis:** An Empirical Case Study on Stack Overflow to Explore Developers' Security Challenges.

Bangladesh University of Engineering and Technology (BUET)

B.S. IN COMPUTER SCIENCE AND ENGINEERING

Dhaka, Bangladesh

Graduated in January, 2011

- **Undergrad Thesis:** Location aware fuzzy logic based decision making of vertical handoff in heterogeneous wireless networks.

Research and Professional Experience

Florida Institute for Cybersecurity Research (FICS)

GRADUATE RESEARCH ASSISTANT

University of Florida

May. 2017 - Present

- Responsibilities include but not limited to designing experiment, performing data analysis, reviewing literature and programming.
- Currently investigating: i) neural learning techniques for source code comprehension and vulnerability detection and ii) AI enabled, usable threat-modeling techniques for software developers.

Cyber Security Lab

GRADUATE RESEARCH ASSISTANT

Kansas State University

Aug. 2014 - Dec. 2016

- Remodeled and improved functionality on Firefox SSL extension launcher for data logging and proxy setting for SSL warning study.
- Conducted semi-structured interview, synthesized survey responses and interpreted interview transcripts to elicit consumer usage pattern and behavior of different payment methods .
- Applied topic modeling in dataset collected from Stack Overflow site to gauge software developers' security perception.

Dynamic Solution Innovators, Inc.

SENIOR SOFTWARE ENGINEER

Dhaka, Bangladesh

Mar. 2014 - July 2014

- Designed and implemented JSON-RPC based microservices for a SaaS based Educational ERP solution.
- Implemented AMQP-based messaging protocol to facilitate fast and scalable client-server communication where client was a Node.js application and server side was a Java component-based framework.
- Reorganized and simplified online payment processing module which resulted in over 50% more efficient than previous one.

Progoti Systems Limited (FinTech company)

SENIOR SOFTWARE ENGINEER

Dhaka, Bangladesh

Mar. 2012 - Feb. 2014

- Orchestrated the engineering and architecture of the core service engine for **SureCash** Mobile Financial Service as a SaaS model which provides money deposit, withdraw and P2P and B2B financial transactions with seamless user experience.
- Headed several major milestones and new product features including three large bank integration with SureCash payment service, implementing and operationalizing USSD based push-pull service to ensure secure and seamless money withdraw service from either Human or ATM agents, rolling out third-party utility bill payment service, to name a few.

Prime Bank Limited

INFORMATION TECHNOLOGY ENGINEER

Dhaka, Bangladesh

Mar. 2011 - Feb. 2012

- Implemented an automated ETL service to run at the end of daily business hours to fetch data from core-banking system's data archive and populate MIS database for business analytics.
- Designed and developed centralized MIS web portal with secure, role-based access control for various bank divisions (e.g., corporate/retail-banking/credit-card) to facilitate real time financial report generation and analysis from current and historical dataset. This system increases efficiency of these divisions in decision making and policy planning over 50%.

Skills

Programming Languages	Java, C/C++ (advanced); Python, C# (moderate); R, SML (prior experience)
Frameworks	Spring, Grails, JavaEE(Servlet/JSP), Hibernate (advanced)
Web/Mobile Technologies	REST/SOAP, JSON/XML, Microservice Design (advanced to moderate); PHP, Node.js, Android, J2ME (prior experience)
Big Data Technologies	Apache Hadoop, Apache Spark, Apache Pig (moderate)
Pen-testing Tools	Metasploit, Kali Linux, Windbg (prior experience)
Database	MySQL, MS-SQL (advanced); Oracle, PostgreSQL (prior experience)
User-Centered Design	Experiment design, Usability analysis, Qualitative & Quantitative Data analysis, Survey & Interview design (moderate)

Academic Projects

Developer-centric Source code linting tools

FICS, UF

RESEARCH PROJECT

May 2017 - June 2018

- Investigated developers' blind spots while using security critical APIs (*in the context of strongly typed (Java) and loosely typed (Python) programming languages*) through developer crowd-sourcing.
- Developed a prototype code-lint tool based on SonarQube Rule engine. Tools used: **Sonar AST tool, XPath Query**.
- The results from first phase of the study (*API blindspots in strongly typed programming languages*) is published in **SOUPS 2018** conference.

Alexa, send SMS to John! : Voice Activated SMS Sending App

K-State

MAJOR LEAGUE HACKATHON, K-STATE

May. 2016

- Worked in a team of three to build voice-activated application for Alexa. Technology used: **Python, AWS Microservices, Twilio SMS API, Alexa SDK**.
- Received 'special mention' award.

'Trusted Tweets': Measure Trust and Informativeness in Twitter Crisis Data

CS, K-State

M.S. COURSE PROJECT FOR DATABASE MANAGEMENT SYSTEMS

Mar. 2015 - May. 2015

- Proposed a trust scoring mechanism based on two different twitter crisis datasets: '2013 Boston Bombing' dataset as an example of Human-induced disaster and '2013 Australian Bushfire' dataset as an instance of natural disaster.
- Analyzed frequency and trending of tweets over time using **Java, MySQL and Apache Pig-Latin**.

MobiAd:Location-based Mobile Advertisement

Dhaka, Bangladesh

ENTREPRENEURSHIP CONTEST 2011

2011

- Coordinated and presented business plan with SWOT analysis, milestones and ROIs for a location-aware intelligent Mobile advertisement platform.
- Champion** in **SpaandanB Entrepreneurship Contest-2011** for unique and innovative business ideas.

SMS Based Intelligent Blood Donation System

CSE, BUET

UNDERGRAD PROJECT

2010

- Designed and implemented a prototype for SMS push-pull based blood donor recruitment, management, available donor query and information retrieval system for developing regions. Technology used: **Java, PHP and MySQL**.
- This work was published in **AINA 2011** conference.

Publications

- D. Oliveira, T. Lin, **Muhammad Sajidur Rahman**, R. Akefirad, D. Ellis, E. Perez, L. A. DeLong, J. Cappos, Y. Brun, N. Ebner. "API Blindspots: Why Experienced Developers Write Vulnerable Code." *To appear in Proceedings of the 14th Symposium on Usable Privacy and Security (SOUPS 2018)*.
- Muhammad Sajidur Rahman**, "An Empirical Case Study on Stack Overflow to Explore Developers' Security Challenges." *Masters Report*.
- Kat Krol, **Muhammad Sajidur Rahman**, S. Parkin, E. D. Cristofaro and E. Y. Vasserman. "An Exploratory Study of User Perceptions of Payment Methods in the UK and the US." In *Proceedings of the 10th NDSS Workshop on Usable Security (USEC 2016)*.
- Muhammad Sajidur Rahman**, "An Efficient PKI for Secure Commerce Using Basic Phones." In *20th Annual K-State Research Forum (KRF), Poster Presentation, March 31, 2015*.
- Muhammad Sajidur Rahman**, K. A. Akter, S. Hossain, A. Basak and S. I. Ahmed, "Smart Blood Query: A Novel Mobile Phone Based Privacy-Aware Blood Donor Recruitment and Management System for Developing Regions," In *Proceedings of 2011 IEEE Workshops of International Conference on Advanced Information Networking and Applications*.

Honors & Awards

2018	Best Poster Award , FICS Research Annual Conference on Cybersecurity, University of Florida	Gainesville, FL
2017	Travel Grant , To attend Conference on Secure Development (SecDev'17)	Gainesville, FL
2015-2016	Fellowship Award , College of Engineering, Kansas State University	Manhattan, KS
2015	Best Graduation Display Award , Open House Day, Dept. of CS	Manhattan, KS
2011	Champion , SpaandanB Entrepreneurship Contest	Bangladesh
2010	Finalist , E-Content and ICT for Development	Bangladesh
2003-2010	Merit Scholarship , Outstanding result in Secondary & Higher Secondary School Certificate Exam	Bangladesh