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   *Gainesville, FL*

PhD Student, Dept. of Computer Science   *2017 - Present*

Kansas State University   *Manhattan, KS*

M.S. in Computer Science   *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)   *Dhaka, Bangladesh*

B.S. in Computer Science and Engineering   *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)   *University of Florida*

Graduate Research Assistant   *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   *Kansas State University*

Graduate Research Assistant   *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.   *Dhaka, Bangladesh*

Senior Software Engineer   *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)   *Dhaka, Bangladesh*

Senior Software Engineer   *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   *Dhaka, Bangladesh*

Information Technology Engineer   *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 (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, PostgresSQL (prior experience)

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*