MD ABDULLAH AL ALAMIN

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EDUCATION

B.Sc. in Computer Science and Engineering September, 2017
Bangladesh University of Engineering and Technology (BUET)
CGPA: 3.06/4.0

Higher Secondary School Certificate July, 2012
Sirajgonj Government College, Rajshahi Board.
GPA: 5.0/5.0

Secondary School Certificate May, 2010
B.L. Government High School, Rajshahi Board.
CGPA: 5.0/5.0

TEST SCORES

GRE: Quantitative: 162, Verbal: 151, Analytical Writing: 3.5 . ***Total***: 313

TOEFL: Reading: 25, Listening: 27, Speaking: 23, Writing: 24 . ***Total***: 99

RESEARCH INTEREST

I am broadly interested in research in software security and software development, especially applying various machine learning techniques to automate or improve the effectiveness of software development. I am interested in building tools that would help developers to be more productive, review, analyze and test source code to find potential bugs or security issues, and help to create secured privacy-preserving software.

RESEARCH EXPERIENCE

- **Title: Security and Privacy Vulnerabilities of Bluetooth Low Energy in IoT and Wearable devices.** **2020**
  Supervisor: Dr. Md. Shohrab Hossain
  Publication: To be submitted to IEEE Communications Surveys and Tutorials (COMST).
  Description: We present a complete taxonomy of security and privacy issues of BLE after conducting extensive research on related works. For every type of vulnerability, we provide a detailed description of possible attack scenarios with proper illustrations, classify them according to their severity, and guide to mitigate the threat. We also provide case studies of these exploits on real BLE devices conveyed by various security researchers. We highlight raising awareness in the community because manufacturers are still releasing new BLE devices without incorporating the latest security recommendations, leaving devices with insecure encryption, vulnerable pairing methods, etc. Our survey will provide a complete manual of BLE security architecture for researchers, developers, and practitioners who are interested in contributing to improve this protocol.
  Topic: Bluetooth Low Energy, Wearable IoT Security and Privacy.

- **Title: Censorship resistance VOIP communication** **2018**
  Supervisor: R&D under Reve Systems Ltd.
  Description: Our team researched and implemented some of techniques to bypass deep packet Inspection and censorship imposed by ISP that satisfied the business requirement of my company. We extensively used Wireshark and tPacketCapture to analyzing network packet to understand complicated protocols and fix application bugs. We tried a lot of ideas and some of the important ones are that we implemented a prototype and commercially deployed Domain-fronting a censorship resistance communication technique

offered by David Field et. al. from UC Berkeley, HTTP and DNS tunnelling, IP/UDP spoofing etc.
Topic: VOIP, DPI, DNS tunnelling.

- **Title: An Approach Towards Greening the Digital Display System [Link]** **2017**
  Supervisor: Dr. A. B. M. Alim Al Islam.
  Publication: 4th International Conference on Networking, Systems and Security (NSysS). Dhaka, Bangladesh: IEEE, December 2017.
  Description: we have devised a novel approach for reducing power consumption of digital signage as well as satisfying human visibility by exploiting duty cycle. Our proposed technique is capable of relinquishing a significant amount (about 14.54% in comparison with existing display system) of power consumption occurred by digital display by keeping an eye on expected human vision.
  Topic: IoT, Energy-efficient.

- **Title: Simulation Study of Vehicular Mobility in City Streets [Link]** **2017**
  Supervisor: Dr. Md. Shohrab Hossain
  Description: In this thesis work, the stochastic properties of vehicular mobility models in city has been proposed and validated by popular simulator VANETSim which run simulation on real street map data.
  Topic: Simulation Modeling, Software Engineering, VANET.

WORK EXPERIENCE

Software Engineer November, 2018 - Present
Samsung R&D Institute Bangladesh [Link]
Web Engine Framework(Based on Google's Chromium open-source project):
I work on Tizen web engine framework that provides the run-time platform for thousands of web applications from Samsung Galaxy Store. This framework is based on Google's Chromium Open Source Project. So, working on this platform gives me an excellent opportunity to work in one of the most significant open-source projects. One of my responsibilities is understanding the underlying architecture of the chromium browser and the relationship of its various modules and provide app capability for different versions of Samsung Galaxy watches.

- I have developing experience with collaboration external as well as remote R&D teams and testers.
- I mentor and maintain a small team of two members as well train new members in our team.
- I have actively participated in the commercialization of Samsung Galaxy 2 & 3.

Software Engineer October, 2017 - November 2018
Reve Systems Ltd. [Link]

- Monitored, profiled VOIP Proxy server application and fixed some critical issues related to Thread Management, Memory leakage and Network and system configuration which resulted in around 20% less resource usage and around 30% performance improvement.
- We extensively used Wireshark and tPacketCapture to analyzing network packet to understand complicated protocols and fix application bugs.

Full Stack Web Developer October, 2016 - July, 2017
Higher Studies Prep [Link]

- Developed some of the core backend features of this system like GRE practice test module, database design, social authentication, full text search.
- Configured, monitored and maintained staging and production server. Reduced page loading time by almost 10% reverse proxy Nginx with Apache

  Technology: Django(Python), Postgres, HTML, CSS, Javascript.

PROJECTS

Factory Management System [Link] 2017
It is an inventory management systems that helps monitoring and maintenance of raw materials, supplies and

finished products ready to be sent to vendors or end consumers.
Technology: Django, MySQL.

TECHNICAL SKILLS

Language	Java, C, C++, Python, JavaScript
Database	MySQL, Oracle, SQLite
Framework	Django, Laravel, Android
Tools	Git, Wireshark, TPacketCapture, Matlab, Linux Shell Scripting

CERTIFICATES

- **AWS Certified Solutions Architect - Associate**
- **Machine Learning** December, 2017
  Andrew Ng, Stanford University, Coursera
  This course provides a broad introduction to machine learning, data mining, and statistical pattern recognition

ACHIEVEMENTS

- Become a contributor in Chromium Open Source Project. 2019
- Government Education Board Merit Scholarship 2013-2016