

## MD SHORIFUL ISLAM

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### EDUCATION

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#### Brigham Young University

Sept 2022

Ph.D. in Electrical and Computer Engineering

- Stochastic Process
- Mathematics of Signal and System
- Intro. To Wireless Networking
- Advance Computer Networks
- Information theory and Coding
- Radar and Satellite Communication
- Numerical Method of Linear Algebra
- Machine Learning Algorithm
- Detection and Estimation Theory
- Digital Communication

#### American International University Bangladesh (AIUB)

Sept 2013 GPA: 3.92/4.00

Bachelor of Science in Electrical and Electronic Engineering

- Telecommunication Engineering
- Programming Language C, C++
- Digital Electronics
- Electrical Circuits Design
- Control System
- Digital Signal Processing
- Electrical Machines
- Industrial Electronics
- Power System Analysis
- Power System protection

### PROFESIONAL EXPERIENCE

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#### Graduate Research Assistant

Sept 2018-Present

Information Theory and Communication Lab, BYU

Provo, UT

Unique Coding Approach to Wiretap Channel Coding

- Inspected existing code efficiency and secrecy for wiretap channel to assure perfect secrecy in wireless communication channels
- Design a unique code for wiretap channel to ensure both high channel capacity and perfect secrecy
- Expand best binary coding results to more difficult and realistic channel models, and design optimal non-binary secrecy coding

#### Graduate Research Assistant

Jan-Aug 2018

Wireless Communication and Networking Lab, University of North Dakota

- Proposed machine learning based efficient jamming detection technique to achieve high detection rate
- Investigated features extraction, features selection, and measured parameters to train model efficiently
- Detected jamming attack with 96.6% accuracy using random forest algorithm

#### Lecturer and Lab Instructor

July 2014-Dec 2017

Uttara University Bangladesh

- Taught students about how to perform soldering, how to operate breadboard, oscilloscope, function generator, and Pspice simulation
- Conducted upper and lower level undergraduate lab courses: Digital Electronics, Control System, Industrial Electronics, Electronic Circuit, Digital Communication, Digital Signal processing

#### Power Engineering Intern

Jan-Feb 2014

Energy pac Power Generation Ltd, Bangladesh

- Gained experience with manufacture of Power Factor Improvement Module, Instrument Transformer (both CT & PT) and Fabrication to investigate design proposals for improving equipment performance
- Recorded test procedures and results deploying numerical and graphical data
- Tested machinery and equipment
- Conducted test of various components
- Built prototypes and present to engineers

## SKILL & EXPERTISES

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- Programming/Scripting:** C, C++, Python, MATLAB/Simulink, Machine Learning Algorithm
- Hardware Tool:** 8085, 8086  $\mu$ p, Arduino, AT89S52 Microcontroller, KV31F, Analog and Digital Circuit Design
- Wireless & Networking:** GSM, 4G-LTE, 5G, RF, WCDMA, Wi-Fi, Bluetooth, Ethernet, TCP, UDP, HTTP
- Lab Tool:** Function Generator, Logic Analyzer, Oscilloscope, DMM, Measuring & Testing Instruments
- OS\ Documentation:** Windows, Mac, Linux, Unix OS, LaTeX, Microsoft Word, PowerPoint, Excel, Visio
- Software Tool:** ATT, DPS, Visual Studio, Code Blocks, Spyder, PSpice, PLC, AutoCAD, Pickit2, ARM, Model Based Design Toolbox, LabVIEW, GitHub, Scheme-it, OptiSystem V-13, Proteus.

## PUBLICATION

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- Youness Arjoune, Fatima Salahdine, **Md. Shoriful Islam**, Elias Ghribi, Naima Kaabouch, "A Novel Jamming Attacks Detection Approach Based on Machine Learning for Wireless Communication" *International Conference on Information Networking (ICOIN)*, IEEE, 2020
- Amin, A. A., **Md. Shoriful Islam** et al. "Design and Performance Analysis of 1.8 GHz Low Noise Amplifier for Wireless Receiver Application" *Indonesian Journal of Electrical Engineering and Computer Science* 6.3, 2017, pp. 656-662
- **Md Shoriful Islam**, et al. "Performance analysis of massive MIMO for 5G wireless communication systems" *International Conference on Computing, Communication and Automation (ICCCA)*, IEEE, 2016

## AWARD, HONOR, & SCHOLARSHIP

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- High impact Doctoral Research Assistant Award at BYU (2018-2020)
- Magna Cum Laude award for academic excellences in all undergraduate years at AIUB (2014)
- University Technical Scholarship for academic excellences in at AIUB (2010-2013)

## CERTIFICATION

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### Coursera Certification

- Getting Started with Python (certified on Oct 2018)
- Introducing to Programming with MATLAB (Certified on Dec 2018)

### Udemy Certification

- 4G-LTE for Industry Professionals (Certified on Jan 2020)

## PROJECT WORK

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### Analyze the V2V Communication using radar

Sept-Dec 2019

- Created a V2V Communication system leveraging MATLAB VANET Toolbox to analyze the V2V communication both with and without Radar system
- Simulations show implement of Radar in V2V communication can improve performance

### Spectrum Analyzer for WiFi

Jan-Apr 2019

- Got familiar with how a spectrum analyzer works and how to deploy one
- Identified characteristics of WiFi
- Examined how WiFi device scans for available access points

### Design, simulation, & performance analysis of systems using Simulink

Sept-Dec 2016

- Modeled Digital Communication systems using Simulink DSP System Toolbox
- Evaluated comparative system performance against interference utilizing different filtering and modulation schemes

### Microcontroller Based Power Management for Base Transceiver Station,

Jan- Sept 2013

- Devised a Microcontroller based Hybrid power management system for Off grid Base Transceiver Station (BTS) to ensure uninterrupted power supply in remote areas in Bangladesh
- Build a prototype and compare with simulation results to prove proposed model efficiency

### Designed Railway Ticket Reservation System Using Programming Language C

Sept- Dec 2012

- Formulated a C programming application without graphics to reserve Railway Ticket online, also search by user and ticket number to retrieve information