Shakil Ahmed

Dallas, Texas
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Education

The University of Texas at Dallas (UTD) **Dallas, TX**
PhD in Electrical Engineering; CGPA: 4.0/4.0 *Aug. 2023 – Present*

Bangladesh University of Engineering and Technology (BUET) **Dhaka, Bangladesh**
BSc in Electrical and Electronic Engineering; CGPA: 3.42/4.0 *Feb. 2017 – May. 2022*

Research Interests

- Digital and Analog Design (VLSI)
- Hardware Security and Automation
- RF and Mixed Signal Device
- ML and NP Hard Algorithm
- Neuromorphic Computing
- Memory and SoC Architecture
- Nanomaterials and Nanodevices
- Semiconductor and Optoelectronics
- Nanophotonics and Biosensor

Research Experience

ECE, UTD **Dallas, TX**
Graduate Research Assistant *Aug 2023 - Present*
- Research in Hardware Security using combination of solver-ml algorithm under NSF funded project.

EEE, BUET **Dhaka, Bangladesh**
Undergrad Thesis Student *Feb 2021 - May 2022*
- Optimized Solar Cell using simulation software, deep learning network and heuristic algorithm.

Pubblications

Transport Layer Material and Thickness Optimization of CsTiBr Based Solar Cell. **Dhaka, Bangladesh**
12th International Conference on Electrical and Computer Engineering (ICECE) (pp. 280-283). *Dec. 22*

Teaching Experience

EEE, Uttara University(UU) **Dhaka, Bangladesh**
Full-Time Lecturer *Feb. 2023 - June 2023*

Courses Instructed:
- Solid State Device
- Electromagnetism
- C Programming
- Communication System
- Transmission and Distribution
- Power Electronics

Genex Learning Center **Dhaka, Bangladesh**
Instructor *Aug. 2017 - Feb. 2023*

Gurukul Online Learning Network **Dhaka, Bangladesh**
Educational Content Creator *Jan. 2021 - Nov. 2021*

Skills

Simulation Software: Cadence, Quartus, CYME PSAF, PSPICE, LTSPICE, Eagle, Proteus, Lumerical, SCAPS.
Hardware Skills: Raspberry Pi 3, Arduino, MDA8086 Microprocessor, ATmega32, STM32, NodeMCU ESP32, SIM800A.
Coding Skills: C, C+, Python, Verilog, SystemVerilog, Assembly, MATLAB, Simulink, BASH.
Others: Microsoft Office, Microsoft OS, Linux OS, LATEX.

Standardized Test Scores

GRE - 311 **13 October 2022**
- Quantitative Reasoning: 167
- Verbal Reasoning: 144
- Analytical Writing: 3.0

TOEFL - 93 **12 November 2022**
- Reading: 27
- Listening: 23
- Speaking: 22
- Writing: 21

Projects

- Finding the shortest path in terms of delay between an input and an output of a circuit (2023)
- True Random Number Generator Using Cadence System Verilog (2022)
- CLB implemented with 3:1 LUT Using Cadence (2021)
- IoT Soil Analysis (2021)
- Electrical Service Design of a Multi-storied Building using AutoCAD Electrical (2022)
- Design and Simulation of Optoelectronics Integrated Circuit using MATLAB (2022)
- Analysis of the control system described in publication titled "Variable-gain control for respiratory systems" (2020)
- Ladder-Snake Game implementation using Proteus Verilog (2020)
- Heart Sound Segmentation using Machine Learning Approach (2019)
- Short Term Load Forecasting using Deep Learning Approach (2019)
- Hardware Implementation of Amplitude Modulation Demodulation (2019)
- Hardware Implementation of IoT Smart Home (2018)
- Fingerprint Detection using MATLAB Image Processing (2018)
- Line Following Robot (LFR) using Arduino (2017)

Relevant Courseworks

- VLSI Circuits & Design (2 courses)
- Functional Verification
- Applied Cryptography
- Data Structure / Algorithm
- RF & Microwave Circuits
- Digital Electronics
- Optoelectronics
- Compound Semiconductor Devices
- Solid State Devices
- Semiconductor and Nano Devices
- Nano-electronics & Nanotechnology
- Process & Fabrication Technology
- Embedded Systems
- Digital Signal Processing
- Communication Systems (2 courses)
- Power Electronics
- Energy Conversion (2 courses)
- Electrical Circuits (2 courses)
- Electronic Circuits (2 courses)
- Numerical Techniques
- Linear Algebra
- Probability and Statistics
- Electrical Service Design
- Calculus (3 courses)

Awards, Fellowships and Grants

National Champion (Creative Talent Hunt) **2015**
Awarded by Prime Minister of Bangladesh *$1000*

Runner-Up, Regional Physics Olympiad **2015**
Bangladesh Physics Olympiad

Runner-Up, Regional Math Olympiad **2013** & **2015**
Bangladesh Mathematical Olympiad

Winner, Poster Competition in Science Camp **2013**
Children Science Congress

Recipient, Scholarship of Merit **2009 - 2020**
Education Board, Bangladesh *$500*

Leadership Experience

Radha Gobinda Chandra Math Camp **Jashore, Bangladesh**
Organizer *2016 – 2020*

Dhabomander Adda (Career Talk) **Jashore, Bangladesh**
Committee Member *2016 – 2020*

Other Experience

BUET Robotics Society **Dhaka, Bangladesh**
Member *2017 – 2020*

BUET Drama Society **Dhaka, Bangladesh**
Member *2017 – 2018*

BUET Hockey Team **Dhaka, Bangladesh**
Goalkeeper *2017*