

# SHAKIL AHMED

Dallas, Texas

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## Education

### The University of Texas at Dallas (UTD)

PhD in Electrical Engineering; CGPA: 4.0/4.0

Dallas, TX

Aug. 2023 – Present

### Bangladesh University of Engineering and Technology (BUET)

BSc in Electrical and Electronic Engineering; CGPA: 3.42/4.0

Dhaka, Bangladesh

Feb. 2017 – May. 2022

## Research Interests

- VLSI Design
- ML in Hardware
- Semiconductor and Nano Device
- Hardware Security
- Neuromorphic Computing
- Low Power Device

## Research Experience

### ECE, UTD

Graduate Research Assistant

Dallas, TX

Aug 2023 - Present

- Research in Hardware Security using combination of solver-ml algorithm under NSF funded project.

### EEE, BUET

Undergrad Thesis Student

Dhaka, Bangladesh

Feb 2021 - May 2022

- Optimized Solar Cell using simulation software, deep learning network and heuristic algorithm.

## Publications

### Transport Layer Material and Thickness Optimization of CsTiBr Based Solar Cell.

12th International Conference on Electrical and Computer Engineering (ICECE) (pp. 280-283).

Dhaka, Bangladesh

Dec. 22

## Teaching Experience

### EEE, Uttara University(UU)

Full-Time Lecturer

Dhaka, Bangladesh

Feb. 2023 - June 2023

Courses Instructed:

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

### Genex Learning Center

Instructor

Dhaka, Bangladesh

Aug. 2017 - Feb. 2022

### Gurukul Online Learning Network

Educational Content Creator

Dhaka, Bangladesh

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

- Quantitative Reasoning: 167
- Verbal Reasoning: 144
- Analytical Writing: 3.0

13 October 2022

### TOEFL - 93

- Reading: 27
- Listening: 23
- Speaking: 22
- Writing: 21

12 November 2022

## Projects

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- 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

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

## Awards, Fellowships and Grants

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<b>National Champion (Creative Talent Hunt)</b>	<b>2015</b>
<i>Awarded by Prime Minister of Bangladesh</i>	<i>\$1000</i>
<b>Runner-Up, Regional Physics Olympiad</b>	<b>2015</b>
<i>Bangladesh Physics Olympiad</i>	
<b>Runner-Up, Regional Math Olympiad</b>	<b>2013 &amp; 2015</b>
<i>Bangladesh Mathematical Olympiad</i>	
<b>Winner, Poster Competition in Science Camp</b>	<b>2013</b>
<i>Children Science Congress</i>	
<b>Recipient, Scholarship of Merit</b>	<b>2009 - 2020</b>
<i>Education Board, Bangladesh</i>	<i>\$500</i>

## Leadership Experience

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<b>Radha Gobinda Chandra Math Camp</b>	<b>Jashore, Bangladesh</b>
<i>Organizer</i>	<i>2016 – 2020</i>
<b>Dhabomander Adda (Career Talk)</b>	<b>Jashore, Bangladesh</b>
<i>Committee Member</i>	<i>2016 – 2020</i>

## Other Experience

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<b>BUET Robotics Society</b>	<b>Dhaka, Bangladesh</b>
<i>Member</i>	<i>2017 – 2020</i>
<b>BUET Drama Society</b>	<b>Dhaka, Bangladesh</b>
<i>Member</i>	<i>2017 – 2018</i>
<b>BUET Hockey Team</b>	<b>Dhaka, Bangladesh</b>
<i>Goalkeeper</i>	<i>2017</i>