

Resume

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Certification : Engineer in Training in Texas, Google data analytics certificate (Capstone Project- [01](#), [02](#))

Interests: Machine learning, Robotics, PLC, Cyber-physical system, Power system and Automation.

Research Experience:

1. [Spectral Behavior of Fiber Bragg Gratings during Embedding in 3D-Printed Metal Tensile Coupons and Cyclic Loading](#)
2. [Gaze Tracking Embedded Collaborative Robots for Automated Metrology and Reverse Engineering](#)
3. [Direct Ink Writing Of In-Situ Shear Exfoliated Two-Dimensional Nanomaterial- Elastomeric Multifunctional Nanocomposite](#)

SKILLS AND WORKS

- Laser Directed Energy Deposition (**LDED**): **Profinet** among Powder Feeder, ABB Robot & PLC (Siemens 1515SP PC2), **Safety Relay**, **TIA Portal**, **HMI**, **Safety I/O**, **Robot Studio**
- **Kuka calibration**, control, programming
- 1KW, 8KW **Laser** operation (LaserLine), **Femto Second Laser Coding**
- **Machine Learning** (image classification, **Mask-RCNN**, **LSTM**, **Transformer**, **KNN** neighbour etc.), **ANFIS**
- Solely programming in **python** to **control** the galvo scanner and laser, control Zaber and Thorlab linear stages, create G-code according to position and laser info from CSV file in order to develop additive manufacturing machine.
- [2022 Defense Manufacturing Expo Event at UTRGV](#) (gesture control of robot with python)
- **Student mentor** in IDREAM4D internship (June 03- August 13, 2021) for building a machine.
- Designing simple solar charge controller with op-amp

EDUCATION AND TRAINING

Aug 2023- Cont. **PhD. in Mathematics and Statistics with Interdisciplinary Applications (CGPA: 3.92)**
The University of Texas Rio Grande Valley, Edinburg, Texas.

- Machine Learning, Deep Learning,
- SAS, R(2yr)
- Probability, Numerical analysis
- Web Scraping, **MySQL**, **Python (4yr)**

Jan 2021- Aug 2023 **MSc. in Manufacturing Engineering (CGPA: 3.90)**
The University of Texas Rio Grande Valley, Edinburg, Texas.

- GAN, Reinforcement Learning (**openai**), image classification, URDF
- G-code, robotic arm control (drawing, predesigned move), TCP/IP, and COM port communication
- **Eye tracker** (ETVision Argus Science)
- Selective Laser Melting, Design of Experiment (Minitab)
- **SIMIO**, **Solid Works**, **Fusion 360**
- **Raspberry Pi (1yr)**, **Arduino (3yr)**

2008-2012 **BSc. in Electrical and Electronic Engineering, CGPA: 3.32 (Scale 4.0)**
Chittagong University of Engineering and Technology (CUET), Chittagong-4349, Bangladesh

- DC and AC circuit analysis, control system, digital logic design, microprocessor, microwave and antenna engineering, digital signal processing
- Programming in C, assembly language for microprocessor 8086, numerical analysis
- Proteus, Microwind, **MATLAB**
- Electrical power production, transmission and distribution
- Power Electronics
- PLC

PROFESSIONAL WORK EXPERIENCE

Jan 2021-Dec 2021 **Graduate Research Assistant, The University of Texas Rio Grande Valley, Edinburg, Texas.**

- Jun 2022-Aug 2022**
- Developing control system for a robot with Raspberry pi and Arduino, Computer based control
 - Robotics, system integration
 - **Teaching** Robotics to high school students (DoD Summer Camp-2022)
- Aug2023-Cont.**

Jan 2022-May 2022 **Graduate Teaching Assistant, The University of Texas Rio Grande Valley, Edinburg, Texas.**

- Aug 2022-Dec-2022**
- Manufacturing Processes Lab (MANE 3164)- Tensile strength, milling, metallurgy
 - Computer-Aided Design (MANE 3300)- SolidWorks
- Aug 2023-Dec 2023**

Dec 2014-Dec 2020 **Assistant Manager, Bangladesh Oil, Gas and Mineral Corporation (Petrobangla),**
Petrocentre, 03 Kawranbazar C/A, Dhaka-1215, Bangladesh

- Natural gas pricing, Re-gasified LNG mixed gas pricing, National Gas production & supply budget
- Preparing answers for the national parliament questions etc.

Business or sector Gov. mother corp. for supervising the gas production, import, transmission & distribution companies in Bangladesh.