

MD NAIEM MOBASSHIR MONIM

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Summary

Mechanical Engineer with a strong foundation in data science, machine learning, and robotics. Experienced in Python, Pandas, NumPy, scikit-learn, and TensorFlow. Demonstrated leadership through technical event organization, team projects, and volunteer work. Hands-on robotics experience in automation and control, and research using data-driven approaches to solve real-world engineering problems.

Education

Bachelor of Science in Mechanical Engineering / *Bangladesh University of Engineering and Technology (BUET)*

Higher Secondary Certificate (HSC) / *Rajshahi College*

2020

- GPA: 5.00
- Board Scholarship

Work Experience

Industrial Trainee / *Synovia Pharmaceuticals PLC*

Dec 2021 – Present

- **Analyzed** 8M+ kWh energy consumption data; identified **5.1%** YoY increase and **46%** cost rise; recommended solar adoption and heat recovery systems.
- **Proposed** IoT sensors for predictive maintenance on pharma machinery, estimating **15–20%** downtime reduction via real-time monitoring.
- **Recommended** AI-driven quality control for packaging and LIMS integration, projecting **30–40%** better defect detection and improved traceability across **1000+** test batches/year.
- **Evaluated** HVAC & cleanroom data (temperature, humidity, particle count) across **20+** zones; tuned parameters to maintain **>98%** GMP compliance and cut deviation incidents by 15%.
- **Studied** procurement & inventory in Oracle ERP across **5000+** SKUs; flagged opportunities for data-driven forecasting and supply chain optimization.
- **Collaborated** with **5+** cross-functional teams (engineering, QA, procurement, utilities, IT) on optimizations in water treatment, energy, and production efficiency.

Skills

Programming & Scripting: Python, MATLAB, SQL, C, C++, JavaScript, Kotlin

Data Analysis & ML: Pandas, NumPy, scikit-learn, TensorFlow, Keras, Matplotlib, Seaborn

Data Handling & Visualization: Excel, Google Sheets

Tools & Platforms: Jupyter, Google Colab, Git, Anaconda

Simulation & Engineering: SolidWorks, ANSYS, Simulink, AutoCAD

Other: \LaTeX , Bash, Linux

Graphics: Adobe After Effects, Premiere Pro, Blender, Audacity, Illustrator, Photoshop, Canva

Soft Skills: Communication, Leadership, Research, Teaching, Critical Thinking, Management, Networking, Teamwork

Projects

Computational Fluid Dynamics with DeepXDE Physics-Informed Neural Networks

- Applied PINNs to simulate Navier–Stokes flow in complex 3D geometries; demonstrated feasibility as a CFD alternative.
- Reduced simulation time while retaining key flow features; validated against ANSYS Fluent.
- Implemented domain/boundary conditions in Python with DeepXDE & TensorFlow.

Robotics Team – Real-Time Control & Automation / *Team involvement*

Ongoing

- Designed & tuned control systems for autonomous robots; improved navigation precision and sensor fusion.
- Implemented ML-based decision systems using Arduino, Raspberry Pi, and ROS; collaborated on mech–elec integration and task planning.

Time-Series Analysis with RNNs/LSTMs: Thermal monitoring of shell & helically coiled tube heat exchanger

- Predicted thermal performance with LSTM models; enabled intelligent monitoring across varying conditions.
- Reduced reliance on repeated CFD runs; used Python, TensorFlow, and simulation data.

- Built 3D design and simulation in ANSYS Fluent; validated with empirical/simulated results.

Visual Vocal: Voice-Controlled Robotic Hand

Real-time sign language translation

- Built a system translating speech to sign gestures with a servo-actuated hand, improving accessibility for hearing-impaired users.
- Used Vosk for offline ASR and MediaPipe for gesture mapping/validation; Arduino + Python control.

3D Face Tracking & Avatar Animation

Blender + MediaPipe

- Real-time avatar animation from facial video input; low-latency face mesh tracking mapped to Blender models.
- Prototyped live streaming of animated avatars via webcam with minimal lag.

Achievements

Entrepreneurship & Leadership Programs

- Champion of Orange Corners BD Ideation Challenge 5.0: Team MycoMatters
- Champion of Cohort 5 of University Innovation Hub Program(UIHP) at RISE, BUET organized by Bangladesh Hi-tech Park Authority and ICT Division.
- Secured 70% scholarship at the ISCEA Prize Global Case Competition 2025
- Selected – University Hub Program 2024 (RISE, BUET)
- Semifinalist – HULT Prize BUET 2024
- Runners Up – Video Essay Challenge, BUET Brainiacs
- Selected – Sustain Launch Labs Cohort

Rover Competitions:Software

- 1st Place – Anatolian Rover Challenge 2023 (Preliminary Round)
- 2nd Place – Anatolian Rover Challenge 2024 (Preliminary Round)
- 13th – European Rover Challenge 2023 (Remote Edition)
- 15th – International Rover Design Challenge 2023
- 27th – University Rover Challenge 2023

Extracurricular Activities

Co-Leader | Animation Lead | Software Sub-team / *Team Interplanetar-A (BUET Mars Rover Team)* *Jan 2023 – Present*

- Contributed to rover communication & perception for ERC 2023/2024, ARC 2023/2024, URC 2023.
- Animated & simulated rover performance for ERC 2023–2025, IRDC 2023–2024.

Campus Spark / *Unilever Bangladesh*

May 2025 – Present

- Led brand engagement on campus; increased participation in UFLP & case competitions; coordinated events and club collaborations.
- Reported student insights to support recruitment & marketing strategies.

Campus Lead / *Grameenphone*

Jan 2024 – Mar 2025

- Organized flagship events (Platform SHE roadshow, Next Business Leader) at BUET; aligned BUET clubs with corporate culture.

Campus Ambassador / *Perfetti Van Melle Bangladesh*

Mar 2025 – Present

- Bridged PVM marketing with BUET campus activities.

President / *BUET Entrepreneurship Development Club*

Mar 2025 – Present

- Ex-Assistant General Secretary, Secretary.
- Organized/administered cultural & flagship events (e.g., “Pioneros” EDC Talk).
- Worked to nurture 7+ startups from BUET
- Designed logos/banners/posters; animated club logo.

General Secretary / *BUET Animata – Animation & VFX Club*

Mar 2025 – Present

- Founding Assistant General Secretary; ran events/workshops on basic animation & 3D modeling; animated club logo.

Assistant General Secretary / *BUET Brainiacs Club*

Sep 2024 – Present

- Produced social media content and supported club events.

Association Representative / *Mechanical Engineering Association, BUET*

July 2022 – Present

- Organized ME FEST 2023,2024
- Organized ME Reception 2023

Additional Information

Languages: English, Bangla, Hindi, German (A2)