

DIPEN SHOME

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Dhaka, Bangladesh

OVERVIEW

A self-driven Mechanical Engineer with over eight years of combined experience as an *R&D Engineer* and *Lead Operations Engineer* in a commercial nuclear power plant, specializing in Turbine operation and maintenance. Currently seeking opportunities to pursue Master's or PhD in Mechanical Engineering with particular interest in the application of AI in navigating real world engineering challenges.

EDUCATION

- **Bangladesh University of Engineering & Technology(BUET)** Passing Year: 2017
Bachelor of Science in Mechanical Engineering GPA: 3.00 (out of 4.00)

Major Coursework:

- Thermodynamics
- Numerical Analysis
- Fluid Mechanics
- Power Plant Engineering
- Control Engineering
- Engineering Mechanics
- Mechanics of Solids
- Fluid Machinery
- Internal Combustion Engine
- Mechanics of Machinery
- Heat and Mass Transfer
- Machine Design
- Nuclear Engineering
- Theory of Structures
- Energy Engineering

- **Chattogram College** Passing Year: 2011
Higher Secondary Education GPA: 5.00 (out of 5.00)

STANDARDIZED TEST SCORE

1. **GRE (General Test)** (Test Date: April 07, 2025)
• Test Score: 318 • Verbal: 157 • Quant: 161 • AWA: 4.0
2. **IELTS (Academic)** (Test Date: Scheduled for December'25)
• Band Score: - • Listening: - • Reading: - • Writing: - • Speaking: -

THESIS AND PUBLICATIONS

C=CONFERENCE, P=POSTER PRESENTATION, T=THESIS

- [T] "Design Basis Accident Analysis of Pressurized Water Nuclear Reactor"
- This undergraduate thesis focuses on the simulation and analysis of four Design Basis Accidents (DBAs) that can occur in a Pressurized Water Reactor (PWR) nuclear power plant. The study utilizes PCTRAN, a PC-based nuclear accident simulator, to conduct the analysis.
- [C] Shome D., Sarkar M.A.R. "Simulation of Steam Generator Tube Rupture Accident in a Pressurized Water Reactor", In "Proceedings of International Congress on Advances in Nuclear Power Plant (ICAPP-2018)", pp. 893-899. American Nuclear Society (ANS). 08-11 April,2018, Charlotte, North Carolina, USA.
- [C] Roy, S., Galib, K. M., Azad, S., Shome, D., Saeed, S. S., & Siraj, M. T. "Clean Energy to the People: How Solar PV Became One of the Most Affordable Energy Sources". In *Proc. 3rd Int. Conf. Mechanical Engineering and Applied Sciences (ICMEAS 2025)*.
- [P] "Analysis of Main Steam Line Break Accident in VVER-1000 Nuclear Reactor", Md. A. A. Ibn Samad, D. Shome, Md. A. M. Abdullah, A. Hoque and M.A.R Sarkar at 2nd INTERNATIONAL BOSE CONFERENCE-2015, Dhaka, Bangladesh.

RESEARCH INTERESTS

- Additive Manufacturing (3D Printing)
- Computational Fluid Dynamics
- Finite Element Analysis
- AI/ML driven Design Optimization, Smart Manufacturing, Predictive Maintenance

PROFESSIONAL EXPERIENCE

- **Lead Operations Engineer (Turbine)**

June 2019 - Present

Nuclear Power Plant Company Bangladesh Limited [🌐]

Dhaka, Bangladesh

- Supervision of installation of Turbine and its related auxiliary systems, equipment and pipelines. *(during construction phase)*
- Monitoring work progress according to established Project Management Procedure to help make informed decision for evaluating Milestones claimed by Installation Organization. *(during construction phase)*
- Actively participated in the Start-up and Adjustment Works (i.e. Post-installation Cleaning, Hydraulic Test, Individual Test) of secondary circuit equipment and pipelines. *(during commissioning phase)*
- Ensure safe, reliable and economic operation of Turbine-Generator for electricity production. *(during operation phase)*
- Development and review of production and technical documentation, maintaining its level at all work places according to the applicable requirements and their follow-up.

- **Assistant Engineer (Mechanical R&D Section), Switchgear Division**

October 2017 - May 2019

Energypac Engineering Limited [🌐]

Dhaka, Bangladesh

- Contributed to the Research & Development team for Medium and High Voltage Air Insulated Switchgear (AIS) and Gas Insulated Switchgear (GIS) by designing new components and modifying existing ones ensuring alignment with project specifications.
- Conducted Finite Element Analysis (FEA) on components and mechanical structures of AIS and GIS, optimizing designs for structural integrity and performance.
- Developed prototypes of AIS and GIS, conducting thorough testing and validation before transitioning to mass production.
- Developed a detailed process workflow for the mass production of AIS and GIS, streamlining manufacturing procedures and improving efficiency.

PROJECTS

- **Academic Project:**

Built a Quad-copter integrated with "Live Video Streaming" for Aerial Surveillance as a "Team Leader" of the project.

- **Professional Projects:**

1. Design, modification and development of prototype for Medium and High Voltage AIS and GIS.
2. Installation and Commissioning of Steam Turbine.
3. Installation and Commissioning of 1200 MW Generator.
4. Installation and Commissioning of Feedwater Systems and its related equipment.
5. Installation and Commissioning of Deaerator.
6. Installation and Commissioning of High and Low Pressure Regeneration System.
7. Installation and Commissioning of Condenser.

SKILLS

- **Programming Languages:** Python
- **Python Packages:** NumPy, Matplotlib, Seaborn, Sci-kit
- **Computer Aided Design:** SOLIDWORKS®, AutoCAD, PTC Creo
- **Simulation (Structural):** ANSYS Mechanical, SOLIDWORKS® Simulation
- **Simulation (Fluid):** ANSYS Fluent, ANSYS CFX, SOLIDWORKS® Flow Simulation
- **Visualization & Graphing:** Keyshot (3D Rendering), Tecplot360 (for Graphing & CFD Post-processing)
- **Writing & Presentation:** ~~LaTeX~~ \LaTeX , Microsoft Office Packages, Google Workspace
- **Research Skills:** Literature Review, Report Writing, Data Analysis, Citation Management

TRAINING & COURSES

- **Professional Training:**

1. Training on Installation, Operation and Maintenance of Steam Turbine and its auxiliary equipment.
2. Theoretical and Simulator Training on Fire Safety.
3. Qualification Maintenance Training for Operations Personnel.

- **Courses:**

1. Fundamentals of Project Management - Coursera [Certificate]
2. Project Initiation: Starting a Successful Project - Coursera [Certificate]
3. Programming for Everybody (Getting Started with Python) - Coursera [Certificate]
4. Python Data Structures - Coursera [Certificate]
5. Using Python to Access Web Data - Coursera [Certificate]
6. Python Basics for Data Science - edX [Certificate]
7. Probability & Statistics for Machine Learning & Data Science - Coursera [Ongoing]
8. Introduction to Artificial Intelligence - Coursera [Certificate]
9. AI for Design and Optimization - Coursera [Certificate]
10. Machine Learning A-Z: AI, Python - Udemy [Ongoing]

AWARDS & SCHOLARSHIP

- "Merit Scholarship" for Academic Excellence (Education Board)
- "Employee of the month" for outstanding contribution (Professional)

PROFESSIONAL MEMBERSHIPS

- **American Society of Mechanical Engineers (ASME)**, (*Membership Certificate*) 2023 - Present