Syed Nazmul Ahsan

Mechanical Engineering Graduate | Islamic University of Technology (IUT), Bangladesh
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SUMMARY

Mechanical Engineering graduate from IUT (CGPA 3.86/4.00, First Class with Honours). Analysed the HVAC chilled-water system at Unilever Bangladesh's Kalurghat factory in a four-week project internship (Certificate of Excellence). Led a six-member capstone team that designed, built and tested a wind turbine prototype.

EDUCATION

B.Sc. in Mechanical Engineering | Islamic University of Technology (IUT), Gazipur | Graduated October 2026
CGPA 3.86/4.00 | First Class with Honours
Thesis (group of four): ANSYS Fluent CFD study of solar panel cooling with a phase change material and aluminium fins
A+ coursework: Refrigeration and Air-Conditioning, Fluid Machinery, Industrial Management, Probability and Statistics

HSC, Science | Notre Dame College, Dhaka | GPA 5.00/5.00 | 2021
SSC, Science | Ideal School and College, Dhaka | GPA 5.00/5.00 | 2019

EXPERIENCE

Project-Based Industrial Intern | Unilever Bangladesh Ltd., Kalurghat, Chattogram | Sep 2025 - Oct 2025
Project: HVAC Chilled-Water System Analysis (4 weeks)

- Analysed energy losses in the factory's HVAC chilled-water system as part of a project team. Located the main pressure drops across the evaporator and distribution lines with pipe head-loss calculations.
- Estimated the total system pressure drop at about 3.3 bar (about 33 m of head) and evaluated the chiller pump. Major changes to the pump system were not needed under the conditions studied.
- Identified two ways to reduce energy losses: lower flow rate through smart pump control and better evaporator performance. Presented the findings and received a **Certificate of Excellence for Project Based Work**.

PROJECTS

MAGLEV-Based Vertical Axis Wind Turbine | Capstone Design Project, Team Leader (six members) | Mar 2026
Supervisor: Dr. Mohammad Nasim, IUT

- Led a six-member team that designed, built and tested a small wind turbine. NdFeB permanent magnets partly levitate the rotor to reduce bearing friction and a multi-coil generator sits at the base.
- Divided the work, tracked the BDT 15,000 budget and handled the test-data analysis, reports and presentations.
- Low-wind tests showed easier start-up and higher open-circuit voltage than a similar bearing-supported turbine.

Cooling Load Estimation for a Commercial Room | Course project
Refrigeration and Air-Conditioning (ME 4713) | Six-member group

- Estimated the design cooling load of a 40 m² room at a retail outlet in Board Bazar, Gazipur by the CLTD/CLF method in an Excel workbook.
- Calculated wall, roof and floor U-values from material layers, then added conduction, glazing solar gain, sensible and latent ventilation loads and internal gains (occupants, equipment, lighting). Total: about 6.5 kW.

1D Ball Balancing Robot | Control-system project | Dec 2024

- Developed a one-dimensional ball balancing robot and presented it at the Cezeri Lab Annual Project Showcase Competition 2024 at IUT. Received a Recognition of Achievement.

TECHNICAL SKILLS

Engineering: HVAC system analysis, cooling-load calculation (CLTD/CLF), pressure-drop calculation, computational fluid dynamics (CFD), heat transfer, prototype fabrication and testing
Software: ANSYS Fluent, SolidWorks, MATLAB, Microsoft Excel, Power BI, Word, PowerPoint
Programming: Python (NumPy, pandas, Matplotlib), C
AI tools: ChatGPT and Claude for coding support and data analysis

AWARDS AND CERTIFICATES

Certificate of Excellence for Project Based Work, Unilever Bangladesh Ltd. | Oct 2025
Champion, Badminton (Doubles), IUT Annual Badminton Competition | 2024

REFERENCES

Available on request.