Md Mehrab Hossen Siam

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Education

- **Bangladesh University of Engineering and Technology (BUET)** Dhaka, Bangladesh
  B.Sc. in Mechanical Engineering ; CGPA: 3.78/4.00 (3.96/4.00 in final four semester) *Feb 2017 - May 2022*
  Relevant Courses: *Heat Transfer, Fluid Mechanics, Automobile Engineering, Control Engineering, Mechatronics, Renewable Energy, Refrigeration and Air Conditioning System, Production Process, Machine Design*

- **Notre Dame College** Dhaka, Bangladesh
  Higher Secondary School Certificate ; GPA: 5.00/5.00 *Apr 2014 - May 2016*

Research Interests

• Heat & Mass Transfer • CFD • Thermal Management • Renewable Energy • Robotics • Additive Manufacturing

Publications

- H.A. Prince, A. Ghosh, M.M.H. Siam, M.A.H. Mamun, "AI Predicts MHD Double-Diffusive Mixed Convection and Entropy Generation in Hybrid-Nanofluids for Different Magnetic Field Inclination Angles by ANN ", International Journal of Thermofluids, Elsevier. doi: 10.1016/j.ijft.2023.100383
- H.A. Prince, M.M.H. Siam, A. Ghosh, M.A.H. Mamun, "Application of Artificial Intelligence on Predicting the Effects of Buoyancy Ratio on MHD Double-Diffusive Mixed Convection and Entropy Generation in Different Nanofluids and Hybrid-Nanofluids", Journal of Thermal Science and Engineering Applications, ASME. doi: 10.1115/1.4062613
- M.M.H. Siam, M. Hossain, and M.A. Rahman, "Analysis of Thermal Performance of Different Materials and Configurations for Insulation Walls of Transport Refrigeration Vehicles" in Proceedings of the 7th World Congress on Momentum, Heat and Mass Transfer, 2022, pp. 1–8. doi: 10.11159/enfht22.224
- M.A.H. Mamun, H.A. Prince, M.M.H. Siam, A. Ghosh, "MHD Double-Diffusive Mixed Convection and Entropy Generation in Different Nanofluids and Hybrid-Nanofluids in a Trapezoidal Enclosure for different Magnetic Field Inclination Angles". under revision review.
- M.A.H. Mamun, H.A. Prince, M.M.H. Siam, "Variations of MHD Double-Diffusive Mixed Convection and Entropy Generation in various Nanofluids and Hybrid Nanofluids due to the Deviation of the Spinning of Double Rotating Cylinders". under revision review.

Professional Experience

- **Research and Development Unit, Spectrum Engineering Consortium Ltd.** Dhaka, Bangladesh
  R&D Engineer(June 2022 - present), R&D Intern(Feb 2022 - May 2022)
  - designed Remotely Operated Vehicle (ROV) by using Computer Aided Design (CAD) Softwares
  - conducted static-dynamic structural and stability analysis of ROV by utilizing hand calculation and simulators
  - fabricated prototype of numerous parts by slicing CAD file, generating g-code and 3D printing through Creality CR6-SE 3D printer
  - supervised manufacturing processes (CNC machining, Welding, Lathe, Milling, Shaping, Drilling, Grinding) of different components of electromechanical system
  - worked with Supply Chain Managment (SCM) for selecting and procuring different readymade products such as motors, actuators, gearboxes, track belt, wheel and so on as per specifications specified
  - worked on a project of 0.1 million USD on developing ROV which can execute specific tasks such as IED Disposal
  - working on a project of 0.5 million USD on developing electromechanical system as Mechanical Lead Engineer
- **Elite Hitech Industries Ltd.** Cumilla, Bangladesh
  Industrial Trainee(Apr 2022)
  - got hands-on experience on manufacturing processes in the production facilities of Bangladesh's only Air Conditioner brand. Explored and studied the working principles, operation procedure of production facilities in details. The investigated resources are: Sheet Metal Operations, Crank Press Machine, Powder Coating Plant, WTP, ETP, Fin Press machine, Vertical Expander Machine, CNC Machining, Plastic Injection Molding Plant, Styrofoam and Insulation Production Facility
  - scrutinized the assembly line of indoor and outdoor unit of Air Conditioner
- **Vikrampur Steel Ltd.** Narayangonj, Bangladesh
  Industrial Trainee(Nov 2019)
  - got hands-on experience on the manufacturing process of different types of products made of steel
  - investigated the operation and working principle of electric furnace
  - explored the operations and working principles of billet caster, rolling mill, cooling bed of steel and steel benders

Language

• Bengali(Native Speaker) • English(IELTS Overall-7.5; L-7,R-8.5,W-6.5,S-7) • German(Elementary Proficiency)

Projects

- **Go-kart Project of Auto Maestro, BUET Automobile Club**: got hands-on experience on developing, implementing ideas, analyzing, manufacturing, testing an automotive system, particularly Go-Kart. participated in the international Go-Kart championship 2020 held in India as a team successfully
- **Efficient Retrieval of Data from Hard Disk Drive using Precise Controller**: performed a detailed analysis on the selection of PID controller to effectively control the servo mechanism of HDD actuator arm. employed Matlab SIMULINK to analyze the system's transfer function numerically
- **Automatic Watering System**: used SolidWorks, Ansys, various machining processes for designing and building the prototype of a electro-mechanical system to perform specified tasks. utilized Arduino Uno, moisture Sensor, Sonar Sensor, and water pump in order to water a garden autonomously by sensing moisture content of soil
- **Thermo-Fluid Equipment Design (Oil Cooler with Bare Inner Tubes)**: used HTRI for optimizing design parameters according to system demand. analyzed and calculated the design parameters of a heat exchanger (DPHX) for manufacturing
- **Air-Conditioning System Design for a facility**: performed comprehensive cooling load calculation and recommended an air-conditioning system for a residential building by utilizing ASHRAE guidelines and databook

Honors and Awards

- University Merit Scholarship, BUET (three times - June 2019, June 2021, January 2022)
- Dean's List Award, BUET (two times - For Level-3 and Level-4)
- University Stipend (two times - 2019, 2021)
- 9th in International Go-Kart Championship 2020, India
- HSC Board Scholarship, Dhaka (2016)
- SSC Board Scholarship, Barisal (2014)
- Regional Runners-up, Physics Olympiad 2013, Barisal region
- Regional second runners-up, Science Olympiad 2012, Barisal region
- JSC Board Scholarship, Barisal (2012)

Extra-curricular Activities

- Joint Secretary, BUET Automobile Club-BAC. (Apr 2021 to Apr 2022)
- Treasurer, IMechE BUET Students Chapter. (Feb 2021 to Apr 2022)
- Association Representative, Mechanical Engineering Association-MEA, BUET. (Jan 2017 to Apr 2022)
- Joint Secretary, BUET Students Association of greater Barisal-DHANSHIRI. (June 2019 to Apr 2022)
- Affiliate Member, Institution of Mechanical Engineers-IMechE. (Feb 2021 to present)
- Student Volunteer, 13th International Conference on Mechanical Engineering, BUET-ICME2019. (Dec 2019)

Skills Summary

- **CAD Softwares**: SolidWorks, Autocad, Fusion 360, Design Modeler, SpaceClaim
- **Simulation Softwares**: Ansys Workbench, Comsol Multiphysics, SolidWorks Simulation, Matlab
- **Programming Languages**: Python, C, Arduino
- **3D Printing Platforms**: Cura, Creality CR6 SE
- **Office Application**: Microsoft Office Suit, LaTex
- **Other Softwares**: Tecplot 360, Siemens Logo PLC, HTRI, 3E Plus
- **Machining**: Welding, Milling, Drilling, Grinding, Lathe, Shaping
- **Soft Skills**: Project and Time Management, Teaching, Leadership, Writing, Public Speaking

Selective Certifications

- **Certified SOLIDWORKS Associate (CSWA) - Mechanical Design** — Feb 2022
  Dassault Systems — *Credential ID: C-ELCR4HNWGK*
- **Certified SOLIDWORKS Professional (CSWP) - Sheet Metal** — Feb 2022
  Dassault Systems — *Credential ID: C-M2ZHCG9D78*
- **Python for Everybody Specialization** — May 2020
  University of Michigan / Coursera — *Credential ID: JGEEFFMGH86B*
- **Excel Skills for Business Specialization** — Aug 2020
  Macquarie University / Coursera — *Credential ID: ZCNDHW8R3GBT*
- **Introduction to Programming with MATLAB** — June 2020
  Vanderbilt University / Coursera — *Credential ID: 2ZFLC25GPZV5*
- **Exploratory Data Analysis with MATLAB** — July 2020
  MathWorks / Coursera — *Credential ID: PGDWZ4BHTE9J*
- **Data Processing and Feature Engineering with MATLAB** — July 2020
  MathWorks / Coursera — *Credential ID: K7EE5BXT3KWA*
- **Introduction to Aerospace Engineering** — July 2020
  MIT / edX — *Credential ID: cbee4b247d174d5b8f63fa4833c79961*

Reference

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