Mohammad Samiul Hasan

New Jersey, USA (Bangladeshi National, F2 Visa)
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Research Interest

- Atomistic Simulation
- Materials Science
- Machine Learning

Education

Shahjalal University of Science and Technology (SUST) **February 2017 - August 2021**
B.Sc. in Mechanical Engineering *Sylhet, Bangladesh*

CGPA: 3.30 out of 4.00 (3.85 in last 65 credits) (Ranked 13th among the graduating peers)
Relevant Coursework (B.Sc.)

- Basic Thermodynamics
- Engineering Mechanics
- Engineering Materials
- Heat Transfer I, II
- Numerical Analysis
- Applied Engineering Mathematics

Presentation - Conference

Paper 01: Mohammad Samiul Hasan and Zinia Sultana Joti. *Tensile Mechanical Performance of Horizontally Twinned Al Nanopillar by Molecular Dynamics Analysis.*
—In Proceedings of 8th International Conference on Mechanical, Industrial and Energy Engineering(ICMIEE 2024)
Paper 02: Zinia Sultana Joti and Mohammad Samiul Hasan. *A Molecular Dynamics Study on the Mechanical Properties of Fe-Cu-Ni Nanopillar Under Uniaxial Tensile Load.*
—In Proceedings of 3rd International Conference on Mathematical Analysis and Applications in Modeling (ICMAAM-2024)

Research Experience

Undergraduate Thesis-work **March 2020 – August 2021**

Topic: Computational Analysis of Bio-inspired Corrugated Airfoil Compared to Conventional Airfoils at Low Reynolds Number.
Supervisor: Md. Shafiqul Islam - Assistant Professor - Dept. of Mechanical Engineering, SUST

- Conducted a thorough literature analysis, assessing roughly fifteen relevant studies, to investigate the use of corrugated airfoils in MAVs and their potential aerodynamic performance at low Reynolds numbers.
- Used Solidworks to prepare and model the input file (3D CAD) for the investigated airfoil configurations.
- Set up simulation parameters and ran numerous simulations to acquire numerical data for the aerodynamic properties of the corrugated airfoil, Conventional airfoil (NACA-0012), and flat plate in steady free-stream flow.
- Collaborated with other team members to contribute to various sections of the thesis paper, ensuring a coherent and well-described comparison of airfoil types and aerodynamic performance.

Professional Experience

BJIT Limited **November 2024 – July 2025**
Mechanical Design Engineer *Dhaka, Bangladesh*

- Developing manufacturing procedures for designed components.
- Identifying and data analysis for commercial components like fasteners, motors, gears, bearings, valves pumps, ports etc.
- Design/data reviewing, error analysis and solving.

Walton Hi-Tech Industries PLC. **November 2021 – October 2024**
Senior Assistant Director - Mechanical Design Engineer *Gazipur, Bangladesh*

- Designed and developed Five unique Blender and Mixer Grinder models based on market research. Two model was introduced in the market in March 2023 and August 2023, while the other two are now in the mold-making stage and One in detailed design and prototyping Phase.
- Solved quality related issue in the production line by implementing different standard tests and Poka-yoke in the design.
- Collaborated with the Production Team to create a streamlined production process for the newly designed Mixer Grinder, ensuring efficient and high-quality output.
- Worked on the development and execution of new fixtures for the machines of the Mixer Grinder's Blade Base Project.

Friday Lab, RoboSUST **January 2018 – November 2019**
Mechanical Engineer *Sylhet, Bangladesh*

- Designed parts for the robot and printed with 3D printer.
- Assembled the robot leg, hand. Worked with machine tools.

Leadership Experience

RoboSUST **February 2020 – June 2021**
Deputy Director of Robotics *Sylhet, Bangladesh*

- Managed a five week long workshop on Introduction to Robotics.
- Took a session on "Introduction to Robotics" at the workshop.
- Helped to organize various webinars during the Corona virus pandemic.

Projects

Construction of a 3 DOF SCARA Manipulator with Multi-functional End Effector.

- Developed a Selective Compliance Articulated Robot Arm (SCARA) with four degrees of freedom for pick-and-place and object sorting tasks.
- Designed and 3D-printed a custom rack-and-pinion mechanism for the robot arm's up-and-down motion.
- Gained expertise in kinematics, inverse kinematics, and their implementation using Python programming.
- Applied computer vision techniques and OpenCV library to identify object locations for pick-and-place operations.

Arduino Based Line Follower Robot with PID Controller Mechanism.

- Designed and built a line-following robot.
- Acquired knowledge in Arduino programming and control theory, including PID control.
- Developed a understanding of hardware-software interaction.

Technical Skills

Programming Languages: Python, C++, C
CAD Software: Solidworks, Siemens NX
CAE Software: Ansys (Fluent, Static), MATLAB
Molecular Dynamics Package: Atomsk, LAMMPS, Ovito
Word Processor and Data Analysis: Word, Latex, PowerPoint, Excel, Minitab

Certifications

SOLIDWORKS CAD Design Associate (CSWA).
Offered By: Dassault Systèmes
SOLIDWORKS Additive Manufacturing Associate (CSWA-AM).
Offered By: Dassault Systèmes

Certification Courses

Machine Learning Specialization (3 Courses)
Platform: Coursera (Offered by Stanford University and DeepLearning.AI)
Introduction to Data Analysis Using Excel.
Platform: Coursera (Offered by Rice University)
Introduction to Programming with MATLAB.
Platform: Coursera (Offered by Vanderbilt University)
Learn to Program: The Fundamentals
Platform: Coursera (Offered by University of Toronto)
Learn to Program: Crafting Quality Code
Platform: Coursera (Offered by University of Toronto)

Reference

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