Tonmoy Saha

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Research Interests

Fluid Mechanics, Computational Fluid Dynamics, Thermal Energy Systems, Nanotechnology, Nanomaterials.

Professional Experience

Bangladesh Steel Re-Rolling Mills Ltd. **January 2023 – Present**
Production Engineer – Rolling Unit – Steel Product (Rebar, Angle, Channel, I-Beam) *Chittagong, Bangladesh*

- Optimization and engineering design of rolling calculation to increase performance.
- Refine metallurgical testing protocols to ensure product integrity
- CAD-based design, considering material properties and mechanical requirements of rolls.
- Create and optimize CNC programs for precision cutting of rolls.

Research Experience

Undergraduate Thesis Work, KUET

- **CFD Analysis of Pulsatile Blood Flow through Bifurcating Artery and Investigating the Effect of Mechanical Properties**
  - *Purposes of conducting this simulation is to identify changes in mechanical parameters due to different artery's geometry with respect to various fluid model which can be used to understand vascular diseases thoroughly.*

Project, KUET

- **Study of Different Mechanical Properties of Woven Jute Fiber Reinforced Composites and its application as a Roofing Sheet**
  - *Fabricating roofing sheet using natural fiber composites (Jute Mat, Jute Yarn and Raw jute fiber), investigate their mechanical properties and compare to conventional roofing sheet.*

Project, BSRM

- **Development and Construction of an Electric Muffle Furnace**
  - *This project focused on designing and building a heat treatment furnace with an automatic control system, utilizing materials sourced locally. The primary purpose of this furnace is to heat mild steel bars to 1200°C for the heat treatment of Rebar, utilizing silicon carbide heating elements to achieve the desired temperatures.*

Academic Credentials

Khulna University of Engineering & Technology **2017 – 2022**
Bachelor of Science in Mechanical Engineering *Khulna, Bangladesh*

CGPA– 3.27/4.00

Standardized Tests

Graduate Record Examination (GRE)
Total Score – 295/340
Quantitative Reasoning – 159/170, **Verbal Reasoning** – 136/170, **Analytical Writing Assessment** – 3.0/6.0.
Date Taken: 18th January, 2024

International English Language Testing System (IELTS)
Overall Band Score – 7.5, **Listening** – 8.5, **Reading** – 7.5, **Speaking** – 6.5, **Writing** – 6.5.
Date Taken: 21st June, 2024

Technical Skills

CAD: SOLIDWORKS, Fusion 360

CAE: ANSYS FLUENT, ANSYS CFX, OpenFOAM, SIMULIA Abaqus, ANSYS Mechanical, LS-Dyna

Languages: Python, MATLAB, C, G-code, M-code, HTML, CSS

Graphics and Rendering: KeyShot, Illustrator, Photoshop, Blender 2.9

Certifications

- **Certified SolidWorks Associate (CSWA)** – Issued by Dassault Systèmes.
- **Online Courses**
  - Machine Learning - by Stanford University (Coursera)
  - ENGR2000X: A Hands-on Introduction to Engineering Simulations – Cornell University (edX).
  - Excel Skills for Business – Macquarie University (Coursera).
  - Python for Everybody – University of Michigan (Coursera).
  - MATLAB Programming for Engineers and Scientists – Vanderbilt University (Coursera).
- **Workshop**
  - AutoCAD & SOLIDWORKS Workshop by CADers
  - Workshop on Programming and Introduction to Robotics" arranged by LOOP

Technical Presentation

- Kamrul, H., Islam, S. , **Saha, T.**, "Linear Programming Approach to Determine Balance Diet with Minimum Cost: A Case Study", Mechanical Festival Poster Presentation, Department of Mechanical Engineering, Khulna University of Engineering & Technology, Khulna, September 2019.

Awards

- Undergraduate Merit Scholarship throughout four academic years for satisfactory academic credentials at KUET
- Third Place – Line Following Robot – Mechanical Festival at Department of Mechanical Engineering, KUET, 2019.

Extracurricular Activities

- Organized workshops on Computational Fluid Dynamics and "Speak Out For Engineering – SOFE, Khulna Regional Heat" as Assistant General Secretary of IMechE KUET Student Chapter.
- Organized workshops on Programming & Introduction to Robotics as Project Manager of LOOP - Control Engineering Club of KUET.
- Led a team of four as Executive (Graphics & Content) for Ignition 2019, a national mechanical festival by KUET's Mechanical Engineering Department.
- Manager (Student) of KUET Mechanical Department Soccer team.
- Runner Up - KUET Inter Department Chess, 2018-19 Season.
- President (Student) of Greater-Mymensingh-Association of KUET

References

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