# SARIA HANNAN

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## SUMMARY

An individual with enthusiasm for collaborating within diverse teams to deliver data-driven solutions. Currently seeking an internship for summer of 2025

## EDUCATION

**Iowa State University**, Ames, IA — Anticipated May 2025
Master of Science in Mechanical Engineering — GPA: 3.73/4.00

**Military Institute of Science & Technology**, Bangladesh — Jan 2017- Aug 2021
Bachelor of Science in Aerospace Engineering — GPA: 3.90/4.00

## PROFESSIONAL WORK EXPERIENCE

- **Graduate Research Assistant:**
  - Numerical Simulation of Gas-Liquid Flows in Bubble Columns using the Euler-Euler multiphase Model and validate it for an optimized Doppler optical probe for phase detection, bubble velocity and size measurements. (June 2024- Present)
  - Collaborated with an experimental team to efficiently produce behavior patterns of velocity parameters and probability density functions for both monodisperse and polydisperse bubbles.
- **Graduate Teaching Assistant:**
  - Course Taught: Heat Transfer- contributed to course improvements, facilitated one-on-one student support, delivered lectures for 103 students, graded assignments, prepared and proctored quizzes. (Aug 2023 – May 2024)
  - Lab Assistance: Led Heat Transfer Lab by conducting experiments, provided guidance on key concepts and problem solving, instructed students on using MATLAB to handle data and generate graphs, tacked students' improvements with feedback sessions. (Aug 2024- Present)
- **Industrial Attachment:** Trainee Engineer of Biman Bangladesh Airlines (Dec 2019-Jan 2020)
  MCC & Line Maintenance, Base Maintenance, Engineering Planning and Records, Engineering Services, Component Inspection & Support Shop Maintenance.
- **Production Specialist (Remote)**: SmartCases, Lakemba, Australia. (June 2021 – June 2022)
- **Visiting Lecturer:** Aeronautical Institute of Bangladesh, Uttara, Dhaka, Bangladesh (Jan 2023 – June 2023)

## AWARDS

Seward, Ratcliffe, and Galloway Foundation Mechanical Engineering Fellow (Monetary Award) — MSc (Fall 2023 & Spring 2024)
Research Excellence Award — MSc (May, 2024)
Teaching Excellence Award — MSc (May, 2024)
Graduate Tuition Award — MSc (2023-2025)
MIST DEAN'S LIST — BSc (2018-2020)

## LEADERSHIP AND INVOLVEMENT

- Led team as Senior Advisor on MIST Aeronautics & Astronautics Club (MAAC) (Jan 2020-Mar 2021)
- Participated in Workshop entitled "Basic Python" organized by Concepta71 (15 May, 2020)
- Attended a Webinar on Finite Element Analysis of Automotive Systems (SIMSCALE) organized by MOTO MIST Automotive Club (1 June 2020)
- Organized a workshop entitled "Crash Course on SolidWorks" (18 June, 2020)
- Arranged a workshop entitled "Exploring Aeronautics with Hassan Saad Ifti" (25 July, 2020)
- Working as Secretary on Mechanical Engineering Graduate Student Organization MEGSO at ISU (Dec 2024-Present)

## TECHNICAL SKILLS

Engineering Software: ANSYS, ANSYS Fluent, OpenFOAM, Abaqus FEA
CAD Design Tools: AutoCAD, SolidWorks
Programming Languages: MATLAB, C, C++, Python, Java
Research Management Tools: Mendeley, Wolfram Mathematica, Zotero

## CERTIFIED COURSES

Programming for everybody: Getting started with python from Coursera (University of Michigan)

Initiating & Planning Projects from Coursera (University of California)

Basic Elements of Design: Design Principles & Software Overview from Coursera (University of Colorado)

Simscale: Foundational knowledge in Computational Fluid Dynamics (CFD) and Finite Element Analysis (FEA) through real world simulations.

Microsoft Excel: Advanced skills in data manipulation, visualization, and statistical analysis.

Microsoft PowerPoint Masterclass: Advanced skills in formal presentations, structured delivery.

Adobe Illustrator (Mastering the Fundamentals): Acquired skills in Graphic Design Application including vector graphics, scaling image maintaining quality.

## POSTERS AND CONFERENCES

- **Validation of Well-posed Euler-Euler Models for Gas-liquid Flows in Bubble Column**
  Center for Multiphase Flow Research and Education (CoMFRE) Poster Session, College of Engineering, Iowa State University (Oct 21, 2024)
  Manjil Ray, Saria Hannan, Rodney O. Fox, Alberto Passalacqua
- **Validation of Well-posed Euler-Euler Models for Gas-liquid Flows in Bubble Column**
  77$^{th}$ Annual Meeting of the APS Division of Fluid Dynamics in Salt Lake City, UT (Nov 24-26, 2024)
  Manjil Ray, Saria Hannan, Rodney O. Fox, Martin Obligado, Alberto Passalacqua
- **Validation of volume fraction profiles and velocity PDFs in a pilot scale bubble column**
  12$^{th}$ International Conference on Multiphase Flows in Toulouse, France (May 12-16, 2025)
  Manjil Ray, Saria Hannan, Rodney O. Fox, Martin Obligado, Alberto Passalacqua