

Abu Kaisar Md Faisal

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Professional Summary

Aspirant Mechanical Engineering graduate hopeful seeking higher studies in Aerodynamics, Fluid Dynamics, and Aerospace Engineering across innovative aerospace optimization and robotic research. Experienced with applied optimization techniques such as Response Surface Methodology (RSM), Genetic Algorithm (GA) in Minitab, MATLAB, and modeFRONTIER, especially in biomimetic designs and their adaptations for aircraft and wind turbines. Skilled in Computational Fluid Dynamics (CFD), Finite Element Analysis, and Biomimetic Design, with practical experience in CAD tools like SolidWorks and ANSYS, as well as IoT-based robotics. Proficient in Python and C++ programming, project management, and technical communication. Fluent in English and Bangla, with recognition for leadership and design excellence through various achievements.

Education

Rajshahi University of Engineering & Technology (RUET)

Rajshahi, Bangladesh

Bachelor of Science in Mechanical Engineering

July 2025

Cumulative GPA: Appeared (8th Semester), 3.82/4.0 (Till 7th semester)

Awards: Best Research Publication Award - Mechanical Engineering Faculty 2025, Technical Scholarship (First Semester, 2020), Merit-based Scholarship (2021, 2022, 2023)

Thesis: *Stall-Adaptive Aerofoil: Numerical and Experimental Optimization of Dimpled and Leading-Edge Protuberance Surfaces*

Ispahani Public School & College

Cumilla, Bangladesh

Higher Secondary Certificate in Science

May 2019

Science, GPA: 5.00/5.00

Achievements: Achieved College Prefect role, earned Excellent Discipline Academic Award.

Research Publications

Peer Reviewed Journal

- M. H. H. Himel, M. Akter, **Faisal, A. K. M.**, M. M. Ahmed, M. H. Masud. (2025). Low-cost innovative food dryers for developing countries: current status and future prospect. *Innovative Food Science and Emerging Technology*. (Accepted)
- M. H. Masud, I. J. Ankhi, **Faisal, A. K. M.**, M. M. Alam. (2025). Translating marine biology into engineering: A review of biomimicry and its applications. *Ocean Engineering*. (Accepted)
- M. H. Masud, **Faisal, A. K. M.**, M. M. Alam, A. I. Rafi, R. Islam, I. J. Ankhi, H. Bai, H. Wang. (2025). Corrugated airfoils for enhanced low-speed aerodynamics: A bio-inspired review. *Physics of Fluids*. (Accepted)
- Ankhi, I. J., Hossain, G. A., **Faisal, A. K. M.**, Hasan, Md. R.-U., Barua, S., & Masud, M. H. (2025). Material flow analysis and risk evaluation of informal and formal E-waste recycling processes in Bangladesh: Towards sustainable management strategies. *Journal of Cleaner Production*, 497, 145090. <https://doi.org/10.1016/j.jclepro.2025.145090>
- **Faisal, A. K. M.**, Ankhi, I. J., Hossain, G. A., Ahmed, M. M., Siddhpura, M., & Masud, M. H. (2025). Emerging concerns associated with E-waste exposure in Bangladesh. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-025-36268-9>
- Olayiwola, O. S., Masud, M. H., **Faisal, A. K. M.**, Siddhpura, M., & Siddhpura, A. (2024). Optimization of dimpled surface of NACA0012 airfoil to enhance the aerodynamic performance. *Tuijin Jishu/Journal of Propulsion Technology*, 50. <https://doi.org/10.52783/tjjpt.v45.i03.7860>

Book Chapters

- **Faisal, A. K. M.**, Ahmed, M. M., Ahmed, R., Ahmed, Md. R., & Masud, M. H. (2025). Innovative methods for transforming food waste into resourceful by-products. In *Resource recycling and management of food waste* (pp. 143–183). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-86688-3_8
- Ahmed, M. M., Hossain, G. A., **Faisal, A. K. M.**, Ananno, A. A., Rashid, M., & Masud, M. H. (2024). Methanol production from municipal solid waste. In *Reference Module in Chemistry, Molecular Sciences and Chemical Engineering*. Elsevier. <https://doi.org/10.1016/B978-0-443-15740-0.00031-8>

Conferences

- Ahmed, M. M., **Faisal, A. K. M.**, Shahadat, M. Md. Z., Hossain, G. A., & Masud, M. H. (2024, December 19). Numerical investigation of the aerodynamic performance of different airfoil configurations for low-speed vertical axis wind turbine applications. *9th BSME International Conference on Thermal Engineering*. [Research Gate](#)
- Hossain, G. A., **Faisal, A. K. M.**, Ankhi, I. J., Dabnichki, P., & Masud, M. H. (2024, December 19). Design modification of Slocum underwater glider: A numerical approach. *9th BSME International Conference on Thermal Engineering*. [Research Gate](#)
- **Faisal, A. K. M.**, Ankhi, I. J., Hossain, G. A., & Masud, M. H. (2024, December 12). Blending airfoils: An innovative approach to improve the aerodynamic performance of a vertical axis wind turbine. *6th International Conference on Mechanical, Industrial and Materials Engineering*. [Research Gate](#)

Experience

Society of Computer Aided Designers (SCADR)

RUET, Rajshahi

General Secretary

May 2024 – July 2025

- Administered operations for a premier CAD club, organizing workshops for 100+ members to foster design innovation.
- Trained 120+ students in SolidWorks and ANSYS, improving design proficiency by an estimated 30%.
- Instructed BAIUST Robotics Society, Cumilla in SolidWorks for 10 days on a club based collaboration "Empowering with SolidWorks".
- Directed a 3D printing seminar, engaging 80+ participants to advance additive manufacturing techniques.

Society of Automotive Engineers (SAE)

RUET, Rajshahi

Joint Secretary

June 2024 – Present

- Coordinated a seminar on "Navigating the Automobile Engineering Landscape" for 120+ attendees, designing promotional materials.
- Developed a solar car design for the Bharat Solar Vehicle Challenge, optimizing aerodynamic efficiency via CFD analysis.
- Instructed 40+ junior students in automobile parts, emphasizing fluid dynamics applications, with CFD analysis of different shape of car spoiler.

Robotic Society of RUET (RSR)

RUET, Rajshahi

Vice President

July 2024 – Present

- Spearheaded "Techmayhem 2023" organization, coordinating 150+ participants to showcase robotics innovations.
- Facilitated a Python training session for 30+ junior members, enhancing programming skills for robotic applications.
- Led the design and development of a prototype robotic arm, integrating sensors to improve precision in automated tasks.

Team Ogrodoot – Robotic Society of RUET (RSR)

RUET, Rajshahi

Mechanical Designer

Dec 2022 – Dec 2024

- Designed suspension and wheel components for a rover, securing 11th place globally in the International Rover Design Challenge 2023.
- Utilized SolidWorks for 3D modeling, designed suspension and wheel system, reducing design iteration time by 20% through efficient CAD workflows.

10 Minute School

Rajshahi, Bangladesh

Content Designer

Feb 2022 – Dec 2023

- Authored PowerPoint content and analyzed data using Excel, supporting 10,000+ users.
- Managed projects, ensuring timely delivery and significantly enhancing user engagement.

Industrial Training

- Completed 10-day training at Bangladesh Power Development Board (BPDB), investigating power plant operations and fluid flow systems.
- Conducted industrial visits to Barapukuria Thermal Power Station, Walton, and Katakhal Power Plant, assessing turbine aerodynamics and manufacturing processes.

Volunteer Experience

Team Matrix - Elite Hackers

Campus Ambassador

RUET, Rajshahi

Feb 2022 – Mar 2024

- Promoted cybersecurity awareness, recruiting 60+ students and accelerating workshop participation by 20%.
- Established a supportive community of 100+ members to foster collaboration.
- Promoted cybersecurity courses and provided academic resources for campus students.

RUET Career Forum (RCF)

General Member

RUET, Rajshahi

May 2022 – May 2023

- Created promotional graphics using Adobe Suite to enhance event visibility.
- Supported event planning for 150+ participants and coordinated the 7th RCF Career Fair.

Bangladesh Youngster Social Organization (BYSO)

IT Technical Support Specialist

Rajshahi, Bangladesh

Aug 2020 – Dec 2021

- Led fundraising campaigns during COVID-2019, raising funds to support community and development.
- Provided IT consultancy for organizational members, helped to develop a website to enhance organizational outreach.

Skills

- **Technical:** SolidWorks, ANSYS, AutoCAD, MasterCAM, MATLAB, Python, C++, Adobe Suite, MS Office, Minitab, SPSS
- **Engineering:** Mechanical Design, Additive Manufacturing, Computational Fluid Dynamics, Finite Element Analysis
- **Soft Skills:** Leadership, Public Speaking, Teamwork, Project Management
- **Languages:** English (Fluent), Bangla (Fluent)

Awards and Competitions

- 1st Place, Best Research Publication Award - Mechanical Engineering Faculty, 2025, RUET.
- 1st Place, Best Research Publication Award - Mechanical Engineering Department, 2025, RUET.
- Merit-based Scholarships, RUET 2021-2023 – Awarded for academic excellence across three years.
- Technical Scholarship, RUET 2020 – Recognized for outstanding performance in first semester.
- 2nd Place, Techmayhem CAD Design Competition 2023.
- 11th Place, International Rover Design Challenge 2023 – Designed Mars rover, competing against global teams.
- 1st Place (Regional), National High School Programming Competition 2017.
- 2nd Place (Regional), National High School Programming Competition 2016.

Certifications

- Certified SOLIDWORKS Professional – Mechanical Design
- Certified SOLIDWORKS Associate – Mechanical Design, Electrical, Additive Manufacturing, Sustainability
- Google IT Automation with Python Specialization
- Python for Everybody Specialization
- Autodesk CAD/CAM/CAE for Mechanical Engineering
- Excel Skills for Business: Essentials

References

• Dr. Mahadi Hasan Masud

Associate Professor

Department of Mechanical Engineering

Rajshahi University of Engineering & Technology,
Rajshahi, Bangladesh

Phone: +880 1889-316864

Email: masud.08@me.ruet.ac.bd

Thesis advisor for aerodynamic optimization research

• Mim Mashrur Ahmed

Assistant Professor

Department of Mechanical Engineering

Rajshahi University of Engineering & Technology,
Rajshahi, Bangladesh

Phone: +880 1759-825470

Email: mashrur@me.ruet.ac.bd

Thesis external, Co-author on E-waste and aerodynamic studies