MD Ashfakul Karim Kausik

BSc. in Industrial and Production Engineering

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LinkedIn
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Education

Feb 2019 – Apr 2023 — **B.Sc. Engineering in Industrial and Production Engineering**
Military Institute of Science and Technology (MIST), Dhaka, Bangladesh.
Final CGPA: 3.11 / 4.00 (EQF Level 6)

Mar 2016 – Feb 2018 — **Higher Secondary School Certificate (HSC)**
Barishal Cadet College, Bangladesh.
Final GPA: 5.00 / 5.00 (Science Background, EQF Level 4).
Awarded Government Merit Scholarship.

Technical Skills & Strengths

Software & Tools	SOLIDWORKS, AutoCAD, CATIA, LaTeX, Zotero, MS & Google authoring tools.
Programming	Python, JavaScript, HTML.
ML & AI	TensorFlow, PyTorch, YOLO, OpenCV, Pandas, NumPy, Matplotlib. Computer Vision, Deep Learning, Object Detection, Feature Engineering, Ensemble Methods.
Dev Tools	Jupyter Notebook, VS Code, PyCharm, GitHub.
Embedded	Arduino, ROS2 (Beginner).
Research	Technical Writing, Data Visualization, Systematic Literature Review, Research Gap Identification, Hypothesis Formulation, Experimental Design, Results Interpretation & Defense, Peer Review, Research Ethics.
Professional	Adaptability, Problem-Solving, Fast Learner, Cross-functional Collaboration, Time Management, Critical Thinking, Communication.

Research Publications

Journal Articles

1. A. S. Arnob, **M. A. K. Kausik**, Z. Islam, R. Khan, and A. B. Rashid, "Comparative result analysis of cauliflower disease classification based on deep learning approach VGG16, inception v3, ResNet, and a custom CNN model," *Hybrid Advances*, vol. 10, p. 100 440, 2025. DOI: 10.1016/j.hybadv.2025.100440.
2. **M. A. K. Kausik** et al., "Machine learning algorithms for manufacturing quality assurance: A systematic review of performance metrics and applications," *Hybrid Advances*, 2025. DOI: 10.1016/j.hybadv.2025.100428.
3. A. B. Rashid, **M. A. K. Kausik**, et al., "Integration of artificial intelligence and IoT with UAVs for precision agriculture," *Internet of Things and Cyber-Physical Systems*, 2025. DOI: 10.1016/j.hybadv.2025.100458.
4. A. B. Rashid and **M. A. K. Kausik**, "AI revolutionizing industries worldwide: A comprehensive overview of its diverse applications," *Hybrid Advances*, vol. 7, p. 100 277, 2024. DOI: 10.1016/j.hybadv.2024.100277.
5. A. B. Rashid, **M. A. K. Kausik**, A. A. H. Sunny, and M. H. Bappy, "Artificial intelligence in the military: An overview of the capabilities, applications, and challenges," *International Journal of Intelligent Systems*, vol. 2023, pp. 1–31, 2023. DOI: 10.1155/2023/8676366.

Conference Proceedings

1. **M. A. K. Kausik** et al., "Real-time detection of defective products of a tortilla machine production line using TensorFlow object detection API and OpenCV," in *Proceedings of the IEEE*, 2024. DOI: 10.1109/RAAICON64172.2024.10928521.
2. M. D. Xames, **M. A. K. Kausik**, et al., "Design, fabrication, and performance analysis of an eco-friendly gutter cleaner," in *Proceedings of the International Conference on Mechanical, Manufacturing, Production and Maintenance Engineering (ICMMPE)*, 2022.

Under Review

- **AK Kausik** et al., "Optimizing Predictive Maintenance of CNC Machines Using Modified Ensemble Learning and Feature Engineering: A Data-Driven Case Study," *Journal of Manufacturing Processes*, Elsevier. *(Under Review)*
- **AK Kausik** et al., "Automated Industrial Fastener Detection: Systematic Benchmarking of YOLOv11 versus YOLOv12 for Smart Manufacturing Quality Control" *Machine Vision and Applications*, Springer. *(Under Review)*

In Progress

- **AK Kausik** et al., "Bayesian Feedback Gain Optimization for Human-in-the-Loop Perception in Vision-Based Robotic Systems: A Control-Theoretic Framework," *(In Progress)*
- **AK Kausik** et al., "Comparative Performance Analysis of YOLOv12, YOLO26, and RT-DETR (Real-Time Detection Transformer) for Real-Time PCB Defect Detection over Six Classes." *(In Progress)*
- **AK Kausik** et al., "Design and Development of an Industrial Autonomous Robot Based on YOLOv11 Modeling for Smart Manufacturing." *(In Progress)*
- **AK Kausik** et al., "Lightweight Vision-Language-Action Models for Real-Time Collaborative Industrial Manipulation: System Constraints, Deployment Strategies, and Research Directions" *(In Progress)*

Employment History

Professional Experience

Feb 2024 – Present
Product Manager, Apploye Inc., Dhaka, Bangladesh.
- Primarily joined as a Junior Engineer working on data analytics; currently serving as team lead and Product Manager overseeing two AI software tools (*rankflo.ai* and *salestial.ai*).
- QA testing, website inspection, R&D, data-driven product strategy, cross-functional collaboration, and feature roadmap planning.

Jun 2023 – Oct 2023
Industrial Engineer, Castrol, Dhaka, Bangladesh.
- Assisted the Product Development and R&D team in routine testing, data recording, and documentation. Arranged presentations at industrial conferences.
- Supported basic analysis of product performance and quality parameters of lube oil.
- Worked closely with R&D and production teams during trials and inspections.

Mar 2022 – May 2022
Trainee Engineer, LINDE, Narayanganj, Bangladesh.
- Conducted data analysis to identify machine breakdowns and designed a predictive maintenance model for potential failure detection.
- Organised safety and hazard presentations for workers. Inspected quality parameters in electrode production.

Employment History (continued)

Research Experience

Dec 2024 – Present

Research Assistant, EcoTech Research Lab, Dhaka, Bangladesh.

- Working on projects related to object detection and robotic arm assembly.
- Conducting data analysis in material sciences, writing literature reviews, contributing to methodologies of papers in progress, and assisting in experimental design and result validation.

Projects

2025 — **Industrial Fastener Detection with YOLOv11**
Built a custom dataset (4 classes) and trained a YOLOv11 model to detect industrial fasteners, achieving **96.93% mAP@0.5:0.95** and **99.07% mAP@0.5**.

2023 — **TensorFlow Object Detection Model for CADSON Tortilla Maker**
Developed an automated real-time defect detector for CADSON Engineering's Tortilla Maker production line using TensorFlow Object Detection API and OpenCV.

2022 — **Eco-Friendly Gutter Cleaner**
Developed an award-winning, solar-powered gutter cleaner with magnetic segregation for eco-friendly and non-eco-friendly elements. Recognised as the department's *Best Project* in 2022.

In Progress — **Industrial Autonomous Robot**
Building an industrial autonomous robot capable of identifying and segregating multiple product classes in a manufacturing production line using YOLOv11 modelling.

Standardized Test Scores

Nov 2023 — **Graduate Record Examinations (GRE)**
Total Score: **306**
Quantitative Reasoning: 160 Verbal Reasoning: 146

Jan 2024 — **International English Language Testing System (IELTS)**
Listening: 6.0 Writing: 7.0 Reading: 6.0 Speaking: 6.5

Extra-Curricular Activities & Certifications

Awards & Honours

2023 — **Recognition as University Representative**.

2022 — **Best Departmental Project Award**.

2021 — **BSTQM English Essay Writing Competition** — Nationwide Runner-up.

2019 — **Dutch Bangla Bank Scholarship**, Dutch Bangla Bank, Bangladesh.

Kheya Scholarship, Epyllion Group, Bangladesh.

IDEA Hamster Business Case Competition — Honorable Mention.

2018 — **HSC Government Merit Scholarship**, Barishal Board, Bangladesh.

2015–2016 — **English Essay Writing Competition** — Divisional Round Champion.

2015 — **Spelling Bee Competition** — Divisional Round Runner-up, Barishal, Bangladesh.

Activities

2022 — **MIST Robotics Club** — Event Executive Panel Member.

2021–2022 — **MIST Career Club** — Supervisor Panel of Organizing.

Extra-Curricular Activities & Certifications (continued)

2022

- **MIST Sports Representative & Football Team Captain**.
- **Barishal Ex-Cadet Association** — ICT Sub-committee Panel Member.

Courses & Certifications

- **Programming Using Python** — Coursera.
- **Python Essentials 1** — Cisco Networking Academy.
- **Diploma in Mechatronics** — Alison Academy.
- **ROS2 for Beginners** — YouTube.
- **Transfer Learning for NLP with TensorFlow Hub** — Coursera.
- **Overview of Data Visualization** — Coursera.
- **Linear Regression with NumPy and Python** — Coursera.
- **Introduction to Machine Learning** — GLearning.
- **Basic Image Classification with TensorFlow** — Coursera.
- **AI for Everyone** — Coursera.
- **JavaScript Essentials** — Cisco Networking Academy.
- **Data Analytics for Beginners** — GLearning.

References

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Military Institute of Science and Technology, Dhaka, Bangladesh.
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