MD RASEL KHANDAKER

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RESEARCH INTERESTS

Machine Vision & AI for automated fabric colour inspection in smart textile manufacturing; IoT-integrated quality monitoring systems; deep learning for defect detection and process optimisation in Industry 4.0 environments; comparative evaluation of manual, IoT, and AI-driven inspection systems.

EDUCATION

MSc in Engineering in Business Management *2023 – 2026*

Multimedia University (MMU), Cyberjaya, Malaysia | CGPA: 3.43

- Thesis: Adoption of IoT-Enabled Quality Monitoring System in a Smart Factory — Fabric Colour Variation
- Focus areas: Manual & IoT-based fabric colour inspection; quantitative data analysis; system evaluation

BSc in Textile Engineering *2018 – 2021*

Sonargaon University, Bangladesh

RESEARCH EXPERIENCE

MSc Research — IoT-Enabled Quality Monitoring in Smart Factory *2025 – 2026*

- Designed an IoT-based quality monitoring system to detect fabric colour variation in textile manufacturing
- Benchmarked manual inspection vs. IoT sensor-based methods; identified performance gaps with statistical analysis
- Findings accepted for presentation at ICTIM 2026 (DIFCON); journal manuscript in preparation

PUBLICATIONS & PRESENTATIONS

Conference Paper (Accepted) *2026*

- Khandaker, M. R., & Thiagarajah, S. P. Adoption of IoT-Enabled Quality Monitoring System in a Smart Factory. Accepted for presentation at ICTIM 2026 (DIFCON), May 2026.

Conference Paper (In Preparation) *2026*

- Khandaker, M. R. Low-Cost Real-Time Fabric Color variation Detection Using Computer Vision.

PROJECTS & SOFTWARE DEVELOPMENT

Smart Factory IoT Dashboard *2025 – 2026*

- Developed an IoT-integrated monitoring dashboard for real-time fabric quality data visualisation.

Portfolio Website — mdraselkhandaker.com *2025 – 2026*

- Independently designed and developed a full personal portfolio website using Flask (Python), HTML/CSS, JavaScript.
- Deployed on cloud hosting with custom domain; showcases research, projects, and technical skills.

TECHNICAL SKILLS

AI & Machine Learning

Image processing, computer vision, deep learning fundamentals (CNN, YOLO), model evaluation

Smart Factory & IoT

IoT-based monitoring systems, sensor integration, real-time data collection, quality control

Web & Software Development

Python (Flask), PostgreSQL, SQLite, HTML, CSS, JavaScript, WebRTC, Flask-SocketIO, Git/GitHub

REFERENCES

Available upon request (MSc Supervisor, Course Professors)