

# Mollah Md Saif

Embedded Software Engineer @ Sa.Ni.Corporate Srl

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Currently working as an Embedded Software Engineer specializing medical device development. At Sa.Ni. Corporate Srl, Italy, I focus on creating innovative software and hardware solutions for medical baropodometry devices, enhancing diagnostic precision and user experience. My expertise extends to developing automation tools for Windows environments and optimizing operational workflows. I specialize in developing predictive analytics and financial simulation models, utilizing machine learning and statistical analysis to gain data-driven insights. With a Bachelor of Science in Computer Science, I bring a strong foundation in Artificial Intelligence, Machine Vision, and Autonomous Systems. My experience includes an internship in AI at Genofax, where I implemented healthcare solutions. My technical portfolio showcases diverse projects in space and robotics, including autonomous navigation systems, Computer Vision modules for Mars Rovers, and CubeSat development.

## Education

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**BRAC University** *Jan 2020 – Sep 2024*  
*BS in Computer Science*

- GPA: 3.65/4.0
- Research: Robotics, Autonomous System, System Automation, IOT, Space Science

## Experience

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**Embedded Software Engineer** *Rome, Italy*  
*Sa.Ni. Corporate Srl* *Jul 2024 – Present*

- Developing software and hardware solutions for medical baropodometry devices, focusing on improving user experience and advancing diagnostic precision
- Designed native Windows program automation tools to streamline processes and increase efficiency

**Artificial Intelligence Intern** *Dhaka, Bangladesh*  
*Genofax* *Jul 2023 – Jan 2024*

- Learning and implementing Deep Learning Models in healthcare systems, including feature engineering and data preprocessing for large-scale medical datasets
- Research on personalized healthcare, focusing on genetics, epigenetics, human nutrition, and microbiome-derived diagnosis
- Developing AI-enabled bioinformatics pipeline for taxonomic classification and profiling of bacteria
- Designing and implementing big data processing pipelines for training machine learning models on distributed systems

**Team Lead** *Dhaka, Bangladesh*  
*BRACU Mongol-Tori* *Nov 2021 – Jun 2023*

- Set goals and objectives and monitored progress and performance of the team
- Provided guidance, mentorship, and direction to team members, fostering a collaborative environment
- Oversaw and contributed to Power System Design and PCB development using Autodesk Eagle
- Initiated and guided the development of a ROS-based communication and control system, utilizing C++, Python, and ROS

## Publications

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- **Autonomous Navigation in Crowded Spaces Using Multi-Sensory Data Fusion**  
*Submitted to: 2025 IEEE International Conference on Robotics & Automation*  
*Status: Accepted (To be presented in May 2025)*

## Projects

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### **Multi-Agent Pathfinder for Optimal Path of Multiple Fog Robot**

*Aug 2023 - Jan 2022*

- Developed algorithms for efficient path generation, collision avoidance, and dynamic obstacle handling
- Integrated YOLOv8 for object detection and AR tags for robot localization.
- Explored reinforcement learning for adaptive navigation
- Configured hardware, programmed microcontrollers, and established communication

### **Eshon-Sat**

*Mar 2022 - Nov 2022*

- Developing and programming On-Board Compute module for a CubeSat
- Conducting research and experimentation on communication protocols and architectures for 1U CubeSat
- Creating an optimized flash memory firmware that enhances space efficiency while extending its lifespan

## Skills

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**Programming Languages:** Python, C/C++, Java, R, Bash, PowerShell, R Programming

**Web Programming:** HTML5, CSS, XML, MySQL, PHP, Jinja, Web Scraping

**Other Languages:** Mathematica, LaTeX, Assembly, Verilog

**Frameworks:** PyQt, Processing, PyTorch, Keras, Flask

**Libraries:** NumPy, Pandas, scikit-learn, Pandas, Matplotlib, seaborn, TensorFlow, scikit-bio, Folium, Foursquare

**Software Tools:** Git, Docker, Jupyter, Proteus, Gazebo, Eagle, Altera Quartus, Microwind, emu8086, LTSpice

**Programming Applications:** ROS, CI/CD, API, Arduino, FreeRTOS, Chocolatey

**Linux Distros:** Ubuntu, Raspbian, Linux4Tegra

## Language Skills and Proficiency

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- **English:** Professional proficiency
- **Bangla:** Native or bilingual proficiency

## Certificate & Training

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- **Python 3 Programming Specialization**  
*Issued by:* Michigan Online, Coursera (2020)
- **Java Programming and Software Engineering Fundamentals Specialization**  
*Issued by:* Duke University, Coursera (2020)
- **IBM Data Science Professional Certificate**  
*Issued by:* IBM, Coursera (2025)

## Honors & Awards

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- **16th in University Rover Challenge 2023**  
*Issued by:* The Mars Society, Utah, USA
- **1st in the National Round of KIBO Robot Programming Challenge 2022**  
*Issued by:* Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan
- **9th in International Rover Challenge 2023**  
*Issued by:* Space Robotics Society, Bengaluru, India
- **Vice Chancellor's List for Academic excellence**  
*Associated with:* BRAC University, Dhaka, Bangladesh
- **Dean's List for Academic excellence**  
*Associated with:* BRAC University, Dhaka, Bangladesh