

Naimur Rahman

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Education

Master's in Data-intensive Intelligent Software Systems - <i>fully-funded Erasmus Mundus Joint Double Degree scholarship (€49,000) by the European Union</i>	Sep 2023 – Present
Mälardalen University, Västerås, Sweden 2nd Academic Year	Sep 2024 - Present
Åbo Akademi, Turku, Finland 1st Academic Year	Sep 2023 - Aug 2024
Bachelor's in Computer Science and Engineering	Feb 2018 – Jun 2022
University of Chittagong, Bangladesh	

Work Experience

EcoPhi, Gothenburg, Sweden <i>Industrial Thesis</i>	Jan 2025 – Present
<ul style="list-style-type: none">Developed a partial discharge segmentation system.Designed the MLOps workflow for scalable server-side integration.	
ABB, Corporate Research Center, Västerås, Sweden <i>Summer Work</i>	Jun 2024 – Oct 2024
<ul style="list-style-type: none">Developed a proof of concept for automated crane spreader landings on the chassis using machine learning and computer vision, in collaboration with ABB Process Automation and CRC Switzerland.Designed a pipeline utilizing stereo cameras, depth sensors, and point cloud data to enhance spatial precision.Integrated ROS2 with stereo camera SDK and Franka Emika to optimise system functionality and ensure real-time processing, by incorporating ArUco marker detection for improved pose estimation.	
Savvy, Slovenia   <i>Research Intern</i>	Nov 2023 – May 2024
<ul style="list-style-type: none">Developed an Atrial Fibrillation detection framework for precordial leads, focusing on model optimization and real-time time-series data monitoring on edge devices with Tiny-ML.Applied Explainable AI (GradCAM) and Deep Learning (TensorFlow) to improve trustworthiness in model predictions and enable efficient deployment on the Coral DevBoard.Increased model efficiency with quantization and pruning techniques, optimizing it for low-power and energy-constrained environments.	
MediProspectsAI, London, UK <i>Junior Software Engineer</i>	Oct 2021 – Dec 2021
<ul style="list-style-type: none">Prepared and developed documentation for multiple UK NHS projects.Built a data analytics dashboard using the Laravel framework and MongoDB.	
<i>Research Associate Intern - Machine Learning and Imaging</i>	Feb 2021 – Sep 2021
<ul style="list-style-type: none">Implemented image classification models in PyTorch for real-time mobile apps, focusing on compact, high-accuracy models.Built a real-time skin lesion detection app in React Native, using Explainable AI (XAI) for transparent predictions and model compression for fast responses on mobile with Redis cache.	
StamaSoft Technologies, Bangladesh <i>Intern, Junior Android Developer</i>	Nov 2020 – Jan 2021
<ul style="list-style-type: none">Worked on native Android apps and PHP-based cross-platform solutions.	

Key Projects

- **Interactive Online Medical Forum Platform** - Developed a full-stack web platform using Native Android, Java, and XML for medical discussions; integrated MongoDB for data storage and REST API for seamless backend communication. [↗](#)
- **Automated Flight Price Scraper and Analyzer** - Developed a web scraping pipeline using Selenium, Selenium Stealth, and Chromium to extract and analyze flight data; implemented data parsing with Pandas and automated reporting for data insights. [↗](#)
- **Expense Tracker Application** - Developed a full-stack expense tracking application using ReactJS, Node.js, and MongoDB; implemented JWT authentication, RESTful APIs, and Redux for state management; integrated Chart.js for data visualization and ensured secure, scalable deployment with Docker and CI/CD pipelines. [↗](#)
- **Vision Transformer-based Medical Report Generation** - Developed an automated system using Vision Transformer and GPT-2; leveraged PyTorch, and OpenCV for image processing and text generation. [↗](#)
- **Real-Time COVID Statistics Dashboard** - Developed a COVID-19 data visualization dashboard using Flutter and REST API; integrated real-time statistics with an interactive UI for improved user experience. [↗](#)
- **Bike Network Analysis for Helsinki Traffic Flow** - Conducted network analysis on Helsinki's bike network using NetworkX, Python, and Matplotlib to model connectivity, visualize flow patterns, and identify critical nodes; provided data-driven urban planning insights. [↗](#)
- **RAG-Based Intelligent Search Engine** - Developed a RAG (Retrieval-Augmented Generation) system using FAISS for efficient vector search and LangChain for LLM orchestration; optimized document retrieval speed and improved response accuracy through context-aware embeddings and query refinement. [↗](#)
- **Real-Time Tracking Mobile App** - Created a location-tracking native Android app using Firebase for real-time data synchronization and Google Maps API for precise geolocation services and route visualization. [↗](#)

Publications - on IEEE Conferences

- Efficient prediction of cardiovascular disease by fusing boosting classifiers with X-AI [↗](#)
- Deep Fusion: Integrating Custom Deep Learning Models for Advanced Waste Classification [↗](#)

Technical Skills

- **Mobile Development:** React Native, Android (Java/XML), Flutter, Firebase, Real-Time Sync, Google Maps API
- **Frontend UI/UX:** React, Redux, Chart.js, Responsive UI Design, Mobile Dashboard Design
- **Backend Integration:** RESTful APIs, MongoDB, Node.js, JWT Authentication, Laravel
- **Testing Debugging:** Unit Testing, Mobile Optimization, Real-Time Error Handling, Performance Tuning
- **Version Control:** Git, GitHub, GitLab
- **Tools Platforms:** Android Studio, VS Code, Firebase Console, Postman
- **Additional Skills:** Cross-Platform Development, Problem Solving, Agile Collaboration, Sprint Participation, Remote Team Communication

Awards & Grants

- **Best Poster Presentation & Video** | EDISS Winter School, 2024
- **Fully-Funded Erasmus Mundus Scholarship** | European Union, 2023
- **1st Place** | Hackathon of East Delta University, 2020
 - Used YOLOv3 to track rickshaws, to control traffic and employed Django framework on the server side to connect the map.
- **3rd Place** | Hackathon of IIUC, 2020
 - Fetched a heatmap in real-time using SAR (Synthetic Aperture Ranging).