Ariful Amin

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Overview

Experienced Software Engineer with 6+ years of building scalable software solutions and data workflows, now expanding into Data Science & AI/ML Engineering through a Master's program. Combines deep software-engineering expertise with end-to-end machine-learning workflow implementation to power real-time analytics in industrial systems. Known for analytical thinking, collaborative teamwork, and innovation. Motivated to support Sweden's transformation through scalable, sustainable AI solutions.

Education

Malmö University, Sweden — Master's in Applied Data Science **Sept 2024 – June 2026**

- **Coursework:** Advanced ML, Statistics, Data Visualization, Big Data, Cloud Analytics, Exploratory Data Analysis

University of Dhaka, Bangladesh — BSc in Computer Science & Engineering **Jan 2014 – Jan 2018**

- **Coursework:** Data Structures & Algorithm, Operating Systems, DBMS, Networking, Software Engineering, Architecture, Distributed Systems, Compiler Design, ML

Technologies

Programming: C++, C, Python, SQL, R, JavaScript/TypeScript
System Expertise: Linux, Distributed Systems, Real-Time Processing, IPC, Tizen OS
Machine Learning: Scikit-learn, PyTorch, TensorFlow, Predictive Modeling, Feature Engineering, Explainability (SHAP, Grad-CAM), Deep Learning, Generative AI, Computer Vision & Sustainable AI
Data Engineering: Apache Spark, ETL Pipelines, Big Data Analytics, AWS, Docker, Kubernetes
Visualization: Power BI, Qlik Sense, Tableau, Matplotlib, Seaborn, Plotly
DevOps: CI/CD (GitHub Actions, Jenkins), Monitoring (Kibana), MLOps
Collaboration: Agile/Scrum, Jira, Git, collaboration, communication, Technical Leadership & teamwork skills

Experience

Teaching Assistant (Part-time), Malmö University **Apr 2025 – Present**

- Conducted lab sessions for Python, C#/.NET, and multi-threaded programming courses for bachelor students.
- Enhanced student engagement and satisfaction by organizing events and coordinating feedback with faculty.

Software Programmer, Coal Power Generation Company Bangladesh **Apr 2022 – Aug 2024**

- Developed a full-stack asset management infrastructure using React, Django, Docker, and AWS, improving transparency and digitizing inventory processes by 40%.
- Built and deployed PyTorch-based forecasting models and a real-time operational analytics dashboard on a private server, improving maintenance planning accuracy by 20% and accelerating decision-making.

Lead Engineer, Samsung R&D Institute Bangladesh **Jan 2022 – Apr 2022**

- Led development of the HeartWise smartwatch app with Samsung Research America, enabling real-time health monitoring of 5,000+ cardiac patients for access to remote health monitoring.
- Implemented BLE-based data synchronization pipelines using C++ that eliminated LTE dependency, improved data reliability, and enabled WiFi-based smartwatch operation, reducing device costs by 10%.
- Performed SonarQube-driven security and code-quality audits across releases, ensuring stability and integrity of health-data pipelines.

Software Engineer, Samsung R&D Institute Bangladesh **Apr 2018 – Dec 2021**

- Implemented firmware and IPC components for Tizen HeartWise app using C/C++, improving data flow across wearable applications and supporting reliable real-time data transfer between different apps.
- Built an automated self-updating system for wearables using Tizen internal APIs and secure signing, improving reliability and reducing manual maintenance.
- Added multilingual and health-tracking features (6MWT), improving accessibility and patient engagement.
- Used Kibana for log analytics and resolved 300+ critical issues, improving system stability and production performance.

Research & Publications

- **CREME – VIP Programme (Sept, 2025–present):** Radar-based people-counting system using ML techniques, focusing on real-time processing and optimization.
- **BSc Thesis:** Published in the IEEE R10-HTC conference under the title "Network Lifetime-Aware Anchor Selection for Energy Harvesting Wireless Sensor Networks."

Personal Projects

Multimodal Deep Learning for Skin Disease Detection [Git Repo]

- Built a multimodal skin disease detection pipeline using dermatoscopic images and clinical data, leveraging preprocessing, pretrained CNNs and autoencoders for feature extraction, and Grad-CAM/SHAP for model explainability.

Employee Attrition Prediction (97% Accuracy) [Git Repo]

- Built a supervised ML models (Logistic Regression, RF, SVM, ANN) with 97% accuracy to predict employee turnover, using predictive analytics to identify behavioral signals linked to churn and improve business value through targeted retention strategies.

CI/CD Pipeline for ML Projects (Hugging Face) [Git Repo]

- Developed a CI/CD pipeline for ML projects, automating testing, deployment, and model versioning using GitHub Actions.

Sweden's School Fire Exploratory Data Analysis [Git Repo]

- Analyzed Sweden's school-fire incidents using Python, geospatial techniques, and Power BI to uncover temporal & socio-economic patterns.

Awards

- **Best Societal Impact Prize (2025), Malmö University Stormathon** — Awarded for building an accessibility and inclusion solution for Sweden's national healthcare platform (1177.se).
- **Swedish Institute Scholarship for Global Professionals (2024)** — A fully funded, merit-based scholarship recognizing leadership potential and contributions to sustainable development.
- **Icon of the Month (2019), Samsung R&D Institute** — Selected from 400+ engineers for outstanding technical contributions to the HeartWise health-tech platform.

Certifications

Machine Learning — Stanford University (Coursera)
Convolutional Neural Networks — DeepLearning.AI (Coursera)
Python Project for Data Engineering — IBM (Coursera)
Introduction to Neural Networks with PyTorch — IBM/Coursera