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Education

Master's in Engineering of Data-intensive Intelligent Software Systems(EDISS) Aug 2024 – July 2026
Åbo Akademi University, Finland & University of L'Aquila, Italy ↗ Finland & Italy

- Joint Erasmus Mundus Master's in **Data Science, Intelligent Systems, and Software Engineering**.
- Accepted as one of 25 students among 464 applicants and awarded **Full Erasmus Mundus Scholarship**.
- **Year 1:** Åbo Akademi University, Finland — foundations in data-intensive systems and core machine learning.
- **Year 2:** University of L'Aquila, Italy — specializing in **Model Driven ML, Software Engineering**.
- **Focus Areas:** Machine Learning, Large Language Models, Small Language Models, Multi-Agent Systems, Model-Driven Engineering, Software Engineering for Autonomous Systems, Software Architectures.

B. Sc. in Computer Science and Engineering May 2019 – Dec 2023
Daffodil International University ↗ Dhaka, Bangladesh

- GPA: 3.95/4.0, **Ranked 3rd in session**.
- Highest Distinction, VC's List, Merit-based Scholarship, Teaching Assistant, Programming Trainer.
- **Coursework:** Data Structures, Algorithms, Data Mining, Software Engineering, Computer Architecture.

Professional Experience

Audio Junior Researcher (Intern) May 2025 – Aug 2025
Huawei Technologies Oy ↗ Tampere, Finland

- Refactored **acoustic scene classification** machine learning code from Jupyter notebooks into modular Python scripts, improving maintainability and facilitating integration into production workflows.
- Implemented **C-Code inference** by replicating Python model layers and reusing trained weights and biases.
- Optimized audio ML pipelines for efficient, low-latency performance in collaboration with cross-functional teams.
- Associated Skills: Python, NumPy, PyTorch, C, Audio Signal Processing, Deep Learning, Git.

Software Engineer Sept 2023 – Apr 2024
Enosis Solutions ↗ Dhaka, Bangladesh

- Redesigned and deployed the Incident Reporting feature using Django REST Framework and React.js.
- Developed a reusable Chart.js visualization module, reducing implementation time across projects.
- Designed and implemented task management features in the incident reporting system by applying **DFS-based topological sort** and integrated **role-based access controls (RBAC)** to manage user permissions.
- Associated Skills: Django Rest Framework, React.js, SQLAlchemy, PostgreSQL, Jira, Documentation.

Research Project

Research Intern Oct 2024 – Present
Elisa Corporation ↗, Summary Demo ↗ Turku, Finland

- Conducted a comprehensive **literature review of more than 30 research papers** to assess and identify optimal forecasting methods for energy markets.
- Performed advanced time-series preprocessing, including outlier detection, imputation, and aggregation. Engineered more than **48 weather-based features** to improve model's accuracy and real-world applicability.
- **Implemented multiple statistical and machine learning forecasting models** and applied hyperparameter tuning with Optuna. Performed backtesting, sliding window testing and SHAP for model evaluation.
- Associated skills: Data Preprocessing, Matplotlib, Scikit-Learn, SARIMA, LightGBM, Optuna, SHAP.

Skills

- **Programming Languages:** Python, C++, JavaScript, C, SQL.
- **Web Development:** HTML, CSS, React.js, Django REST Framework, Postman, Swagger.
- **Tools & Technologies:** AWS, Docker, Kubernetes, Git, SQLAlchemy, PostgreSQL, Selenium, Pytest.
- **Machine Learning:** Time-series Forecasting, Supervised/Unsupervised Learning, Model Evaluation, PyTorch, Scikit-learn, LightGBM, NLP, Prompting, LLMs, SLMs, Fine-tuning, Multi-agent systems.
- **Data Manipulation & Analysis:** Feature Engineering, EDA, Statistical Analysis, Pandas, Matplotlib.
- **Additional Skills:** Self-learning, Documentation, Presentation, Time Management, Adaptability, Team-work.

Project

YouTube Sentiment Analysis (End-to-End)

[GitHub Repository ↗](#)

- Developed an **end-to-end ML pipeline** for YouTube comment sentiment classification using LightGBM.
- Deployed a REST API and integrated a Chrome extension to deliver in-browser sentiment predictions.
- Implemented **ML lifecycle management with DVC** and MLflow for tracking, version control, deployment.
- Designed modular pipeline stages for data ingestion, preprocessing, model training, evaluation, and registration.
- Associated skills: LightGBM, DVC, MLflow, Flask, Scikit-learn, NLP, MLOps, Extension Development

Programming and Awards

- **ICPC Regional:** Ranked 31st out of 1600 teams at the ICPC Regional Dhaka, placing in the top ranks.
- **Google Kickstart:** Ranked 29th in Bangladesh and **932nd globally** out of more than 7000 participants.
- **Problem Solving:** Authored **15 algorithmic problems** across topics such as Graphs, Dynamic Programming, and Mathematics for competitive programming contests. Solved over 3000 problems on various online judges.
- Ranked among Bangladesh's **Top 15** in Codeforces (3 times) and **Top 5** in CodeChef (2 times), with maximum ratings of 1607 and 2049, respectively.
- Actively participated in over **400 programming contests** across platforms such as Codeforces and CodeChef.

Extracurricular Experiences

- **Problem Setter & Judge** (National Girls' Programming Contest, 2022): The largest programming contest for women in Bangladesh, where I designed and created problem sets, tested and reviewed other problems and developed the solution validation code.
- **Judging Director** (DIU Take-OFF and Unlock The Algorithm Programming Contest, 2023): Led the judging process for a contest with over 2400 participants, curated problem sets, solutions, and made critical decisions.
- **Vice President of Computer Club** (ACM Task Force, 2022): Organized and managed ACM events, trained juniors on competitive programming topics, conducted seminars and advanced camps, and organized the selection process for national contests and IUPC.
- **Technical Writer** (Canadian Computing Competition, 2022): For She Thinks Code (NPO) authored detailed problem editorials explaining solution intuitions and code, providing educational content for participants.

References

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