

ADEL MAHFOOZ

SOFTWARE/ MACHINE
LEARNING ENGINEER

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PROFILE

- Award-winning **Lead Software Engineer** with 7 years of experience in Cloud platform integrations, software development and Telecom Charging Systems.
- Twice awarded the prestigious **"Hacker's Choice" Award** at MTSU's HackMT events (2023 and 2024), demonstrating technical expertise in competitive programming challenges.
- Proficient in Python, C++, C, PHP, TypeScript, HTML, Linux OS, MySQL, and Azure Cloud.
- **Certified Azure Data Scientist & Engineer associate** with demonstrated experience in machine learning projects.
- Capable of building novel machine learning systems and software applications that advance medical research.
- Proven ability to effectively advocate technical solutions to data scientists, engineers, and product managers.

TECHNICAL COMPETENCIES

- **Languages:** Python, C++, PHP, Bash, C, HTML, TypeScript, MySQL.
- **Cloud:** Azure Suite, OpenStack.
- **Machine Learning:** Feature engineering, supervised/unsupervised learning, Deep Learning, TensorFlow, PyTorch,

PROFESSIONAL EXPERIENCE

Middle Tennessee State University, Murfreesboro, TN Aug 2022 – Present

Graduate Teaching Assistant, Python, C++ & C

- Teaching Assistant for Python, C++, and C undergraduate programming courses, with over **152** students enrolled.
- Session meets twice per week.

Key Research Projects:

- **AI-Powered Dataset Interaction System:** Won the "Hacker's Choice" Award at the HackMT event 2023 for developing AI driven chat system. The Python-based software solution enabled conversation with internal large datasets, without the need for SQL queries. Leveraged Hugging Face's TAPAS model for question-answering on tabular data.
- **Interactive College Selection Software:** Secured the "Hacker's Choice" Award at the HackMT 2024 event for developing a software tool that helps students find the best suitable colleges. Consolidated data in GeoJSON format and integrated Google Maps API for college location visualization, utilizing Python for backend data handling and JavaScript for frontend development.
- **Healthcare Technology Software:** Pioneered machine learning software (TensorFlow) that used ECG data to predict abnormal heart conditions.
- **Cryptocurrency Forecasting:** Leveraged LSTM models (TensorFlow) to analyze and forecast the influence of economic indicators (interest rate and recession probability) on Bitcoin prices.
- **Deep Learning Applications:** Handcrafted machine learning model (TensorFlow) tailored for recognizing English letters and digits, optimized for CPU efficiency. Achieved accuracy comparable to Resnet50v2 and Mobilenetv2 but with half the parameters and faster processing, applying Data Augmentation techniques to address overfitting.
- **Natural Language Processing:** Utilized multinomial Naïve Bayes Classifier (scikit-learn) and Azure Machine learning (MLflow) to execute sentimental analysis.

Telenor, Grameenphone Ltd, Dhaka, Bangladesh

Dec 2013 – Dec 2020

Lead Engineer (May 2018 – Dec 2020)

Spearheaded the complete lifecycle of critical server migrations and platform integration projects. Established a robust, secure, and scalable enterprise system and infrastructure aligned with business growth goals.

- Designed and integrated near-real-time frontend software to monitor and control 300+ server traffic, interconnecting 70M subscribers.
- Engineered software using Python and SQL to detect faulty network devices and take over control, reducing customer complaints by **21%** and revenue loss.

scikit-learn, Azure Machine learning, Databricks.

- CI/CD with GitHub Actions.
- Software Design and Unit Testing.
- TCP Dump, Snoop Analysis.

EDUCATION

- **M.S. in computer science (May 2024)**
Middle Tennessee State University, Murfreesboro, TN, USA, **CGPA: 4.0.**
- **B.S. in Electrical and Electronic Engineering (2013)**
Ahsanullah University of Science and Technology, Dhaka, Bangladesh, CGPA 3.87 (WES verified).

CERTIFICATIONS

- Microsoft Certified: Azure Data Scientist Associate.
- Microsoft Certified: Azure Data Engineer Associate.
- Red Hat Certified System Administrator (RHCSA).
- Red Hat Certified Engineer (RHCE).

HONORS & AWARDS

- Member of the Honor Society of Phi Kappa Phi, **Top 10%** of graduate students.
- Awarded "Hacker's Choice" at MTSU's HackMT 2024 event.
- Awarded "Hacker's Choice" at MTSU's HackMT 2023 event, competing against 80 skilled coders.
- Full merit-based scholarship from Middle Tennessee State University.
- Best Employee, Technology Award (Q1, 2018) – GP, Telenor.

- Collaborated as a key team member in a group of 7 developers to build a completely automated enterprise software system suitable for remote work during the COVID pandemic.
- Led key projects, including migration of legacy systems to a 600+ server OpenStack platform and partial transitioning with **zero** outage of **13M** subscribers for load balancing.
- Partnered with vendors like Nokia, Ericsson, Wipro, and Accenture to deliver maintenance, software upgrade, and migration projects.
- Automated web browsing and reported user experience using Selenium in Java.
- Conducted unit testing following change in software or new launch of products.

Senior System Engineer (Dec 2016 – Apr 2018)

Collaborated with a team of engineers to upgrade and enhance enterprise system capabilities and troubleshoot both hardware and software. Performed root cause analysis to identify and diagnose critical technical malfunctions.

- Recipient of the **Best** Employee, Technology Award (Q1, 2018).
- Steered and coordinated software updates (using Salt) and server integrations, following MOP protocols.
- Maximized system performance and operational efficiencies by developing automation software solutions in Python, C++, Bash, SQL, and PHP. Built and integrated performance monitoring tools, and developed RESTful API based real-time alert systems using Telegram and Messaging (SMPP) server.
- Managed and coordinated second-level issue resolution to optimize communication across multiple servers in transmission layers.
- Promoted automation of multiple repetitive and mission-critical tasks to minimize human errors, including SMS and Email notifications and log management.
- Efficiently configured interconnected servers, including Voice, Recharge, and Data Service, to improve the overall enterprise system performance.
- Supported team by being on-call, one-week on, one-week off.

System Engineer (Dec 2013 – Nov 2016)

Monitored critical telecom components from Network Operations Center (NOC) to elevate network speed and efficiencies.

- Monitored and performed 1st level fault handling of telecom components while on roster shift duty at the front desk.
- Liaised with vendors and 2nd level engineers on critical fault resolution and software optimization.