FABEHA FATIMA

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Education

University of Massachusetts Amherst *September 2024 – Expected May 2026*
Master of Science in Computer Science *GPA: 3.91/4.0*

Relevant Coursework: Advanced Algorithms, Theory and Practice of Software Engineering, Distributed & Operating Systems, Systems for Data Science, Introduction to Computer and Network Security, Statistics

Internship Experience

W. E. B. Du Bois Library Data Services, University of Massachusetts Amherst, USA
Student Assistant Researcher, Library Data Services *March 2025 – Present*

- Built a **geospatial data** processing module in **Python** to parse and analyze **TIFF raster imagery**, computing centroids and spatial bounding boxes as structured outputs for scalable data pipelines.
- **Generated** a structured **research database** by aggregating and normalizing metadata from multiple repositories, enabling reproducible analysis of institutional data publications.

Cisco Systems Bengaluru, India
Technical Undergraduate Intern *January 2021 – July 2021*

- **Designed** and **developed** the **AppDynamics Operationalizing Tool** with **Java**-based backend services and a custom frontend built using **JavaScript**, **HTML**, and **CSS**. The tool automated monitoring recommendations, health-rule tuning, and alert configuration for newly onboarded microservice-based applications; leveraged **MongoDB**-backed workflows to improve reliability and contribute to **99.9% system uptime**.

Work Experience

Cisco Systems Bengaluru, India
Software Engineer II *November 2022 – August 2024*

- Developed a **full-stack unified observability dashboard** consolidating metrics from 3 disparate monitoring platforms, **enabling 525 application teams** to access **1.09B+ daily metrics** in **real time**; improved operational efficiency by **35%** through **centralized visibility**, **caching**, **CI/CD automation** (Jenkins, Kubernetes), and customizable alert workflows.
- Architected a **load-balanced, multi-region cloud** monitoring **architecture** using **dockerized** Zabbix with SSO integration and **≤15s failover** across 35,000+ hosts; delivered **100% resiliency** compliance and **saved $3.4M** in yearly licensing by migrating to this open sourced setup.
- Engineered a custom **Logstash** pipeline in **Ruby** to deduplicate and r**efine event logs** before publishing to Kafka, **reducing alert fatigue** by **60%** and streamlining incident response for cross-functional teams.

Software Engineer I *August 2021 – October 2022*

- **Independently designed** and **developed** a **plugin**-based **full-stack notification tool** with **Java**-based backend services and a **React**-based user interface. The system automated email dispatch and supported **customizable role-based alerts**, improving migration coordination for **25,000+ Cisco servers** and driving cross-team adoption.
- Spearheaded a team of 5 engineers to build a **RESTful Spring MVC** service with integrated **Swagger** documentation for onboarding 500+ applications to AppDynamics; open-sourced the automation API on **Cisco Code Exchange**.

Projects

TradeNet: Distributed Stock Exchange (GitHub) *February 2025 – May 2025*

- Developed a **distributed**, **fault-tolerant** trading platform on **AWS** with REST APIs for client requests and **gRPC** for inter-service communication across microservices.
- Implemented an **LRU caching** layer for stock lookups, **reducing** query **latency by 70%.**
- Engineered crash-resilient order services with **automatic failover** under **10 seconds** and **replica synchronization**, ensuring no data loss during simulated crashes and concurrent trade loads.

LLMs to the Rescue (GitHub) *October 2024 – December 2024*

- Addressed **class imbalance** in **news topic classification** on the **AG News** dataset by applying **LLaMA 3.2**–based **style-transfer** data augmentation to generate synthetic minority-class samples.
- Constructed a controlled class-imbalanced benchmark by down-sampling a target class to **10%**, simulating real-world underrepresentation to evaluate augmentation strategies.
- Improved minority-class performance for **Logistic Regression** and **RoBERTa**, achieving **+52% recall**, **+26% F1**, and **+9% accuracy** for Logistic Regression; RoBERTa reached **99.8% recall** and **98.8% F1** after augmentation.

Technical Skills

Languages & Frameworks: Java, Python, C++, JavaScript, SQL, Bash, Flask, Django, Spring MVC, Node.js, React, CSS
ML & Data Science: PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, Matplotlib; NLP
Systems & DevOps: Linux, Docker, Kubernetes, Jenkins, CI/CD, AWS, REST, gRPC, Nginx, Kafka, PySpark
Databases & Tools: MySQL, MongoDB, Git, GitHub, Bitbucket, JIRA, ELK Stack, HTML, JSP, Tableau, Elasticsearch