Sarbagya Bhattarai

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Education

Texas A&M University **GPA: 4.0**
Bachelor of Science in Computer Science *May 2027*

Relevant Coursework: Data Structures and Algorithms, Computer Organization, Programming Languages, Intro to Computer Systems, Foundations of Software Engineering, Database Systems, Statistics, Linear Algebra

Experience

Visa May 2026 – Aug. 2026
Software Engineer Intern *Austin, TX*

- Designed and deployed an automated CI/CD validation platform across **5 microservices** to accelerate remediation of security findings with **90-day resolution deadlines**, reducing development and validation from **˜2 weeks to ˜2 days (˜85% faster)**.
- Built a cross-repository **GitHub Actions** pipeline automating Docker builds, AWS ECR pushes, Kubernetes environment provisioning, E2E testing, PR reporting, and teardown in **under 20 minutes**, replacing hours of manual setup and validation.
- Automated isolated per-PR environments on **AWS EKS** using Kubernetes and Helm, provisioning application services, databases, secrets, and messaging resources with automatic teardown after validation.
- Engineered configurable image and test overrides with automated Helm and ECR validation, enabling developers to test **cross-service feature dependencies before merge** without modifying the CI/CD pipeline.
- Published automated E2E API results directly to pull requests, enabling developers to identify failures and validate security fixes before review and merge.

Texas A&M University - SRL Labs Aug. 2025 – May 2026
AI/ML Researcher *College Station, TX*

- Built a YOLO-based computer vision pipeline processing **1000+ videos** for human activity classification and behavioral analysis.
- Engineered temporal and spatial pose features and trained **Bidirectional LSTM models** with TensorFlow/Keras, achieving **92% training accuracy**.
- Developed a TensorFlow/Keras **Intrusion Detection System (IDS)** to classify **14 network traffic categories** from the CICIDS2017 dataset, achieving **89% overall accuracy** across benign and malicious traffic.
- Applied **dropout and L2 regularization** across **78 traffic features** to improve generalization on highly imbalanced attack classes.
- Built preprocessing and evaluation pipelines for precision, recall, F1-score, ROC-AUC, anomaly detection, and inference analysis across **DDoS, DoS, PortScan, brute-force, web attacks, and benign traffic**.

R3S Trading May 2025 – Aug. 2025
Software Engineering Intern *Georgetown, TX*

- Built a secure **full-stack Inventory Management System** with **RBAC and JWT authentication**, enforcing **100% role coverage**.
- Developed backend services with **Spring Boot and Spring Security**, achieving **˜85% test coverage** and reducing security-related defects by **˜40%**.
- Containerized services with **Docker**, reducing setup time by **˜70%** and deployment time by **˜50%**.
- Resolved **95% of critical defects within SLA** through defect tracking, root-cause analysis, and validation testing.

Projects

HPC Copilot | *FastAPI, React, TypeScript, PostgreSQL, Docker* 2026

- Built a full-stack HPC platform for job submission, monitoring, and real-time status visualization using FastAPI, React, and PostgreSQL, supporting **100+ concurrent workflows** and reducing job-tracking time by **40%**.
- Developed an AI-powered assistant for natural-language HPC queries and knowledge retrieval using **Dockerized FastAPI services** and PostgreSQL, reducing troubleshooting time by **30%** for containerized workflows.

News Sentiment Analyzer | *FastAPI, React, TensorFlow, SQLAlchemy* 2025

- Built an AI platform using TensorFlow and FastAPI to classify sentiment and detect anomalies across **300+ news articles**.
- Developed automated data pipelines, **JWT-secured REST APIs**, SQLAlchemy persistence, and model validation workflows for article processing and prediction.

Technical Skills

Languages: Java, Python, C++, C#, SQL, JavaScript, TypeScript, Bash
Frameworks: Spring Boot, React, FastAPI, Angular, TensorFlow, Keras, Scikit-learn
Technologies: AWS, Docker, Kubernetes, GitHub Actions, Jenkins, Helm, ArgoCD, Git