

# Ayush Sharma

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## EDUCATION

### Vellore Institute of Technology

Vellore, TN

Bachelor of Technology in Computer Science | **CGPA: 8.73**

Jul. 2019 – Jun 2023

**Coursework:** Data Structures, Algorithms, Databases, Computer Networks, Operating Systems, Cybersecurity, AI

## EXPERIENCE

### Software Engineer 1

Jan 2023 – Present

Hewlett Packard Enterprise

Bengaluru, KA

- Working in core Java on Linux environment as a backend developer for HPE's carrier-grade multimedia server/MRF for IMS/4G/5G, named OpenCall Media Platform, which supports audio and video-enabled services.
- Contributed to the migration of NFV applications from traditional VM-based deployment to Kubernetes, **enhancing scalability and reducing deployment time.**
- Developed distroless images for **faster deployment, and a 75% reduction in storage footprint**, with automated dependency management ensuring up-to-date libraries and minimized security vulnerabilities.
- Orchestrated data aggregation and **improved real-time monitoring and alerts** using Prometheus and Grafana
- Created CI/CD Jenkins pipelines to **assess code quality (90% coverage)** for all components before deployment
- Integrated Azure Speech Services with SIP and RTP protocols for advanced and robust multimedia services in IMS/4G/5G networks, leveraging experience with Netann/MSCML and MSML.
- Created a Selenium test framework for end-to-end GUI automation and conducted penetration testing to detect XSS and CSRF attacks, **significantly reducing testing cycles and enhancing application security.**
- Led a team to develop a Gaussian Naive Bayes spam detection model, utilizing natural language processing to safeguard users during live voice calls, **demonstrated at Mobile World Conference 2024.**

### Research Intern

Oct 2021 – April 2022

Samsung R&D Institute

Bengaluru, KA

- Developed a C++ library supporting multiple protocols (TCP, UDP, MQTT, GRPC, HTTP, FTP) for client-server communication in a mesh environment, with APIs handling various data types.
- Optimized the library to achieve up to **30% lower latency and 25% higher throughput compared to standard TCP** by implementing multi-threading, asynchronous I/O (Boost.Asio), payload compression, packet handling, connection pooling, efficient serialization using ProtoBuf, and employing zero-copy techniques.

### Machine Learning Research Intern

Mar 2020 – June 2020

Indian Institute of Technology

Kanpur, UP

- Developed custom DenseNet-based CNN models, designing architectures based on image resolution and receptive field. Used augmentation, batch normalization, adaptive learning rate schedulers and optimizers, regularizers, and callback techniques to **optimize accuracy by 13% under limited computational resources.**
- Conducted a comparative analysis for ImageNet dataset using Python, TensorFlow, and Keras, focusing on training complexities and vanishing gradients, finding that ResNets enhance training efficiency and accuracy.
- Published findings in the IJSER journal (IF:5),** and recommended future exploration of unsupervised learning and scalable parallel training algorithms. [\[Paper\]](#)

## PROJECTS

### Log Ingestor and Query Interface | Python, Flask, FastAPI, Docker, Git

[\[Project\]](#)

- Developed a Python-based log ingestion API using FastAPI, integrating Elasticsearch for real-time log storage, and retrieval, ensuring scalable performance, and built a web interface for enabling full-text search across logs.

### Views on Vaccine | Python, React, Express, AWS Comprehend, Git

[\[Project\]](#)

- Spearheaded a real-time application by categorizing tweets reflecting public sentiment on Covid vaccines; incorporated dynamic map visualization, increasing data accessibility for researchers and policy makers

## TECHNICAL SKILLS

**Languages:** Java, Python, C/C++, SQL, MATLAB

**Frameworks:** Agile, Flask, FastAPI, NLTK, Selenium, JUnit

**Tools/Techologies:** Git, Docker, Kubernetes, Prometheus, Grafana, Postman, Jenkins, Jira

**Libraries:** Pandas, Tensorflow, Keras, NumPy, Matplotlib, BeautifulSoup

**Certifications:** Certified Kubernetes Application Developer, AWS Certified Cloud Practitioner