

AYUSH SHARMA

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OBJECTIVE

To pursue a Master's in Computer Science focusing on distributed systems, further expanding my expertise in building scalable, high-performance, and carbon-aware computing systems, and aspiring to work as a Software Architect at tech companies like Google and Microsoft.

EDUCATION

Bachelor of Technology in Computer Science and Engineering, Vellore Institute of Technology, Vellore

CGPA: 8.73/10

Jul 2019 - Jul 2023

ACADEMIC PROJECTS

1. Log Ingestor and Query Interface [\[Project Link\]](#)

Jan 2023 - Apr 2023

Team Size: 2

Role: Team Lead

Description: Engineered a distributed log ingestion service in Go to handle high-throughput gRPC/REST client data. Published logs to Kafka topics for asynchronous communication between services. Leveraged Zookeeper to eliminate single points of failure and ensure high availability performance. Ingested logs to InfluxDB, designed to handle large volumes of time-series data.

Technology Stack: Go, Apache Kafka, Apache Zookeeper, InfluxDB, Kafka-Pixy, gRPC/REST

2. Transaction Ledger [\[Project Link\]](#)

Jan 2022 - Apr 2022

Team Size: 3

Role: Team Lead

Description: Created a finance application using SpringBoot and Spring Cloud, with circuit-breaker and transactional outbox pattern for resilient APIs and four microservices for loans, cards, and accounts, using RabbitMQ for transaction event notifications. Leveraged Docker, Kubernetes, and Helm for scalable and reliable deployment.

Technology Stack: Java 8, Maven, Spring Cloud, MySQL, OAuth2, RabbitMQ, Docker, Kubernetes, Lambda

3. Food Ordering Application [\[Project Link\]](#)

Jul 2021 - Oct 2021

Team Size: 2

Role: Team Lead

Description: Designed a food ordering application to search and display nearby restaurants, developed API endpoints for querying and cart management, and enhanced performance with Redis caching, achieving a P99 latency of 100ms. Optimized multithreading to increase the concurrent searches that can be performed to 10,000+ requests.

Technology Stack: Java 8, Gradle, SpringBoot, MongoDB, Redis, JMeter, JUnit, Mockito, Multithreading

4. View on Vaccine [\[Project Link\]](#)

Jan 2021 - Apr 2021

Team Size: 3

Role: Team Lead

Description: Spearheaded a real-time application by categorizing tweets from India and the USA reflecting public sentiment on COVID-19 vaccines using NLP. Generated time-series insights by analyzing daily tweet trends with key events annotations, such as vaccine authorizations and discussions on vaccine efficacy. Incorporated dynamic map visualization, increasing data accessibility for researchers and policymakers.

Technology Stack: Python, React, Express, AWS Comprehend, Mapbox

WORK EXPERIENCE

Hewlett Packard Enterprise, Bengaluru, Software Engineer 1

Aug 2023 - Present

- Working as a backend developer for HPE's carrier-grade multimedia server/MRF for 5G networks, named Telco 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.
- Created distroless images for **faster deployment and a 75% reduction in storage footprint**, with automated dependency management ensuring up-to-date packages and minimized security vulnerabilities.
- Orchestrated data aggregation and **improved real-time monitoring and alerts** using Prometheus and Grafana
- Integrated Azure Speech Services with SIP and RTP protocols for advanced and robust multimedia services like ASR and TTS, leveraging experience with Netann/MSMML and MSML protocols.
- Led a team to develop a scam detection model utilizing Azure Cognitive Speech Service for Speech-to-Text to safeguard users during live voice calls. **Demonstrated at Mobile World Congress 2024.**
- Created CI/CD Jenkins pipelines to **assess code quality (90% coverage)**, integrated Selenium test framework for end-to-end GUI feature automation, and conducted penetration testing to detect XSS and CSRF attacks, **significantly reducing testing cycles and enhancing application security.**

INTERNSHIPS

Hewlett Packard Enterprise, Bengaluru, Research and Development Intern,

Jan 2023 - Jul 2023

- Prototyped a scalable, context-aware RAG-based private chatbot for Enterprise Support using Streamlit with Greenlake Platform integration. Streamlined on-demand information retrieval from recorded training sessions and product documents, **reducing onboarding and case resolution time from weeks to hours.**
- Leveraged FFmpeg to convert media files to text and utilized LangChain for text splitting and embedding, integrating ChromaDB vector store with Hugging Face Pipeline.

Samsung R&D Institute, Bengaluru, Research Intern,

Oct 2021 - Mar 2022

- 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 10% lower latency and 15% higher throughput compared to standard TCP** by implementing multi-threading, async I/O (Boost.Asio), payload compression, packet handling, connection pooling, efficient serialization using ProtoBuf, and employing zero-copy techniques.

Indian Institute of Technology, Kanpur, Research Intern

Mar 2020 - Jun 2020

- Developed custom DenseNet-based CNN models, designing architectures based on image resolution and receptive field of ImageNet dataset. Used augmentation, batch normalization, adaptive learning rate schedulers and optimizers, regularizers, and callback techniques.
- **Outperformed traditional models** like ConvNet and VGG16 in validation and training accuracy by **~15%** under limited computational resources and high constraints.
- Conducted a comparative study on efficiencies of variants of CNNs focusing on training complexities and vanishing gradient problem
- **Published findings in the International Journal of Scientific & Engineering Research Journal** and recommended future exploration of unsupervised learning and scalable parallel training algorithms. [[Paper](#)]

TECHNICAL SKILLS

Languages: Java, Python, C/C++, Golang, Bash, SQL, and MATLAB.

Frameworks: Agile, Spring Boot, Flask, Streamlit, FastAPI, gRPC, NLTK, LangChain, Selenium, and JUnit.

Tools/Technologies: Git, Docker, Kubernetes, Prometheus, Grafana, Kafka, Elasticsearch, Postman, Jenkins, and Jira.

Libraries: Pandas, Tensorflow, Keras, NumPy, Matplotlib, and BeautifulSoup.

CERTIFICATIONS

- Certified Kubernetes Application Developer by the Linux Foundation
- AWS Certified Cloud Practitioner by Amazon Web Services

Jul 2024 - Jul 2026

Aug 2021 - Aug 2024

ACHIEVEMENTS, CO-CURRICULAR, EXTRACURRICULAR

- Earned 1000+ recognition points in a year for outstanding contributions and performance at HPE. **2024**
- Winner at WE HACK 3.0 Honeywell Challenge by IEEE Women in Engineering, VIT. **2022**
- VIT LEO Club was voted the Best Outreach Club at VIT, for two consecutive academic years. **2022**
- Received a Certificate of Excellence for outstanding performance during the internship at Samsung. **2022**
- Second Runners Up at Stat-a-thon organized by the School of Advanced Sciences **2020**
- Runners Up at Ideathon by Google Developers Students Group, VIT. **2019**

COMMUNITY INVOLVEMENT

HPE's School Education Program, Volunteer

Aug 2024 - Present

- Set up computer labs and drafted a computer science textbook that introduced students at Kaverinagar Government School to the basics of computers and AI, using intuitive and easy-to-understand examples.

Mentor Together, Mentor

Jan 2024 - Apr 2024

- Provided guidance and support to two college students, assisting them in resume building, interview preparation, and career planning, enhancing their placement and work readiness skills.

VIT LEO Club, Core Committee Member

Sep 2021 - Apr 2023

- Taught mathematics and led successful fundraising initiatives to provide essential resources such as food and clothing for underprivileged children.
- Organized cultural events for Anbu Illam orphanage for differently abled children to promote engagement.
- Hosted a health checkup and blood donation camp with Narayani Hospital Vellore and Apollo Hospital Chennai that benefitted over 200 people.

LANGUAGES KNOWN

English (proficient), Hindi (native), French (fluent), Spanish (basic), and Bengali (basic).