Sreehitha Reddy Narayana

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Education

University of Massachusetts Amherst **Aug 2024 – May 2026**
Master of Science in Computer Science— GPA: 3.76/4.0 *Amherst, MA*

Indian Institute of Technology, Hyderabad **Jul 2019 – May 2023**
Bachelor of Technology in Computer Science *Hyderabad, India*

- Awarded Panasonic Ratti Chhatr Scholarship for academic excellence

Relevant Coursework

- Data Structures
- Computer Architecture
- Software Engineering
- Machine Learning
- Artificial Intelligence
- Linear Optimization
- Linear Algebra
- Probability
- Statistics
- Systems for Data Science
- Algorithms for Data Science
- Database Design

Experience

Jio Platforms Ltd **Jul 2023 – Aug 2024**
Software Engineer *Bangalore, India*

- Engineered high-performance C++ components for 5G architecture, focusing on Session Border Controller (SBC) node and Session Management Function (SMF), boosting network reliability by 15%.
- Conducted network analysis using Wireshark, reducing troubleshooting time by 30% through efficient packet capture and analysis.
- Deployed Landslide for comprehensive telecom network testing, validating system robustness across 50+ test scenarios.
- Collaborated with senior developers weekly to refine coding standards based on established best practices; this effort contributed directly to improved team efficiency during project sprints over three successive cycles.

Projects

Scalable Distributed Vector Search System - Research Project | *FAISS, HNSW, Python* **May 2025 – Present**

- Designed a distributed vector search engine for scalable ANN retrieval on 10M+ vectors using HNSW indexing.
- Working on coarse quantization and selective multi-host querying to balance recall and latency in distributed settings.
- Benchmarked recall, latency, and throughput using self-developed evaluation tools across single- and multi-host setups.
- Integrated FAISS with a Python-based coordination layer to enable parallel query dispatch, result merging, and distributed evaluation.

High-Performance Database Indexing System | *Java, B+ Trees, Buffer Management* **Jan 2025 – May 2025**

- Built a disk-based B+Tree indexing system for 100K+ records with optimized insert, search, and range query support.
- Built a buffer manager with LRU eviction and configurable memory limits (1MB–1GB) to reduce disk access latency.
- Developed a query execution engine using pipelined relational operators (Scan, Selection, Projection, BNL Join) for efficient multi-stage join processing on large datasets.

Credit Card Fraud Detection System | *PySpark, Random Forest, AWS, Apache Kafka* **Aug 2024 – Dec 2024**

- Designed real-time fraud detection system achieving 98% precision on imbalanced datasets (1:1000 fraud ratio).
- Integrated Apache Kafka for processing 10,000+ transactions/sec, deployed scalable solution on AWS EC2 instances.
- Enhanced Random Forest classifier using SMOTE and feature engineering, cutting false positives by 25%.

Publication Management System | *Java, DSpace, API Integration* **Jan 2023 – May 2023**

- Built web application managing 5,000+ research publications using DSpace digital repository.
- Streamlined backend services and database interactions, accelerating processing by 40%
- Orchestrated API integrations for automated metadata collection across platforms.

Technical Skills

Languages: Python, C++, Java, SQL, R, MATLAB
Machine Learning/AI: PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, SMOTE
Tools & Frameworks: PySpark, Apache Kafka, Git, Maven, Gradle, Wireshark, Junit, LaTeX
Systems & Development: REST APIs, Service-Oriented Architecture, Web Development, DevOps, Linux
Cloud & Data: AWS, PostgreSQL, SQLite

Leadership & Activities

- Organized community development programs benefiting 500+ underprivileged students through education initiatives.
- Led logistics for a technical competition with 100+ participants, increasing attendance by 30% over previous year.
- Secured 3 inter-university medals in singles and doubles carrom competitions.