

VENKATA HARSHITHA BATHALA

Phone: +1 (682)-406-1948 | Email: venkataharshithab01@gmail.com | LinkedIn: [LinkedIn](#) | GitHub: [GitHub](#) | Portfolio: [Portfolio](#)

PROFESSIONAL SUMMARY

Software Engineer with experience in full-stack web development, mobile application development, and backend systems. Proficient in Java, Python, C++, and Dart, with expertise in REST API design, cloud services (AWS, Azure, Firebase), and database management (SQL, MongoDB). Skilled in Agile methodologies, CI/CD automation, and test-driven development, with proven ability to deliver scalable, user-centric solutions across web, mobile, and distributed environments.

EDUCATION

- University of Texas at Arlington** | Master of Sciences in Computer Science – Texas CGPA: 3.9
- Annamacharya Institute of Technology & Sciences** | Computer Science & Engineering - India CGPA: 8.34

EXPERIENCE

- Software Engineer** | Perfect Solutions Sep 2025 – Till Date
- Designing and developing scalable **Java 17 microservices** with Spring Boot, integrating them with internal systems through REST APIs.
 - Contributing to the architecture and implementation of **Spring Boot microservices** for a high-volume financial data processing platform handling over 1M transactions per day.
 - Leading backend development efforts for Account Management and Market Data services using Java 17 and Spring Boot.
 - Implementing secure REST APIs with Spring Security, including JWT-based authentication and role-based access control.
 - Optimizing database performance by tuning **SQL queries** and implementing Redis caching layers to improve response times.
- Volunteer Research Assistant** | University of Texas at Arlington May 2025 – Aug 2025
- Deployed and maintained the **CTFd platform** by configuring Nginx, MariaDB, and Docker to host web-based CTF challenges in a secure environment.
 - Installed and integrated essential components (**PHP, Socat, Docker, MariaDB**) to support diverse challenge types, ensuring reliability and scalability.
 - Authored detailed **deployment documentation** to streamline future maintenance and facilitate smooth scaling of the CTF environment.
- Software Engineer** | University of Texas at Arlington Jul 2024 – May 2025
- Designed and developed a comprehensive **web portal** for UTA's **200+ CSE Faculty** utilizing HTML5, CSS3, JavaScript, and PHP, significantly enhancing resource accessibility and departmental efficiency.
 - Implemented complete **LAMP** stack architecture with Apache web server configuration, MySQL database design, and optimized PHP back-end to support secure authentication and dynamic content delivery.
 - Executed front-end development focusing on responsive design principles and intuitive user interface elements that simplified navigation and improved faculty adoption rates.
 - Consolidated essential information into a **centralized web application**, including inventory details, networking and security policies, supported operating systems and tools, completed projects, important forms, and faculty request submissions.
 - Configured **20+ lab systems**, implemented LUKS encryption and Linux security protocols
 - Created **15+ automated Bash scripts** for system maintenance, user management, and access control
 - Optimized virtualization resources and monitored **2 UTA servers** for resource usage and **99%+ uptime**
 - Worked with Debian-based (Ubuntu) and RPM-based (CentOS, Red Hat, Fedora) systems
- Associate Professional Software Engineer** | DXC Technology, Chennai Jan 2023 – Dec 2023
- Developed and maintained features for a Enhanced a **Java 11 + Spring Boot e-commerce platform** by implementing scalable backend services, REST APIs, and MVC-based business logic.
 - Developed a **CRM platform with React.js, Node.js, and Express.js**, improving client retention by **20%**, while optimizing frontend performance with React + Redux, Bootstrap, and CSS (15% faster load time).
 - Designed and executed **data migration from MySQL to MongoDB**, boosting flexibility and search performance.
 - Configured and integrated **Apache Kafka (MSK)** for real-time event streaming, ensuring responsive communication between mobile apps and backend services.
 - Leveraged **AWS (EC2, Lambda, S3, CloudWatch)** to optimize application performance, scalability, and system health monitoring.
 - Implemented **CI/CD pipelines** with Jenkins, GitHub, Docker, and Kubernetes ,cutting delivery cycles by **30%**.
 - Documented **RESTful APIs** using **Swagger** for easy integration and consumed third party APIs effectively.
 - Improved code quality by conducting peer code reviews, establishing best practices, and increasing unit test coverage to **90%** using **JUnit and Mockito**.
 - Wrote and executed **SQL/Oracle scripts** for reporting and migration, improving data accuracy and availability.
 - Collaborated in an **Agile environment using Jira**, working closely with QA teams to resolve cross-platform synchronization issues with simulators, emulators, and device logs.

PROJECTS

- Gambol Spark – Sports Retail & Reservation Mobile App** [Git Repository](#)
- Developed a Android application using **Flutter & Dart**, integrating sports accessories retail with field reservation features.
 - Implemented **Firebase backend services** for authentication, real-time database, and secure cloud storage to enhance user experience.
 - Designed and optimized **user-friendly UI/UX** in VS Code, ensuring seamless navigation and flexible booking options for customers.
 - Tech Stack:** Flutter, Dart language, Firebase, VsCode
 - Gambol Spark Application – [Preview Link](#)

Distributed Systems Fault Tolerance

[Git Repository](#)

- Implemented three core fault-tolerant distributed protocols: SWIM for failure detection, Two-Phase Commit for atomic transactions, and Raft for leader election and log replication.
- Built failure detection using the SWIM protocol with gRPC and Python for efficient node monitoring and membership management in Docker-based microservices.
- Engineered a Two-Phase Commit system with vote and decision phases, leveraging Protocol Buffers for robust cross-language coordination.
- Developed a Raft consensus module with leader election and log replication, validated using a custom fault injection framework in Python and NodeJS.
- **Tech Stack:** Python, NodeJS, gRPC, Protocol Buffers, Docker, SWIM, Two-Phase Commit, Raft

Smart HealthCare Hub

[Git Repository](#)

- Designed a full-stack healthcare platform supporting patients, providers, and pharmacists with features like appointment booking, EHR management, and real-time messaging.
- Engineered a responsive UI using React and implemented RESTful backend services in PHP with MySQL.
- Ensured HIPAA-aligned security via encrypted authentication and role-based access control.
- Built a scalable database schema to handle high-volume transactions efficiently.
- **Tech Stack:** React, JavaScript, PHP, MySQL, Axios, HTML5/CSS3

Sentiment Analysis on Song Lyrics

[Git Repository](#)

- Developed a sentiment analysis system for imbalanced Spotify song lyrics using NLTK for preprocessing including tokenization, stop-word removal, and lemmatization.
- Applied Word2Vec embeddings with Gensim and addressed data imbalance using stratified sampling and data augmentation through the nlpaug library.
- Trained and tuned a bidirectional LSTM model achieving 75 percent accuracy, and enhanced performance to 77 percent using a BERT model from Hugging Face Transformers.
- Evaluated models with confusion matrix and classification metrics using Scikit-learn, delivering a real-time text classification pipeline ready for production use.
- **Tech Stack:** Python, NLTK, Gensim, TensorFlow, BiLSTM, BERT, Hugging Face Transformers, Scikit-learn, nlpaug

TECHNICAL SKILLS

Languages: Python, Java, C/C++, Go
Backend: Java, Spring Framework (Spring Boot, MVC, Security, Data JPA), Micro-services, RESTful APIs, gRPC, GraphQL, Hibernate, Servlets, JSP, Kafka, RabbitMQ.
Frontend: React, Angular , JavaScript (ES6+), TypeScript, HTML5, CSS3, SASS, Redux, Bootstrap, Material UI.
Cloud: AWS (EC2, S3, ECS, Lambda, DynamoDB, RDS, Step Functions), Azure (VMs, Load Balancer, VMSS, NSGs)
Databases: PostgreSQL, MySQL, Oracle, MongoDB, MariaDB, Redis, SQL, PL/SQL.
Machine Learning & AI: PyTorch, TensorFlow, Keras, Scikit-learn, NLTK, Hugging Face, BERT, Computer Vision, NLP
DevOps: Jenkins, Docker, Kubernetes, Git, Maven, Gradle, Ansible, Bash scripting
Testing & Tools: JUnit, Mockito, Jira, GitHub, Swagger, JIRA, Apache, Tomcat, Excel, Power BI.
Methodologies: Agile, Scrum, TDD (Test-Driven Development)
OS: Linux, Unix, Windows

CERTIFICATIONS

- AWS Certified Cloud Practitioner
- Microsoft Certified: Azure Fundamentals (AZ-900)
- AIGPE Lean Six Sigma Yellow Belt