ABHILASH REDDY GUNUKULA

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Summary

Full-stack developer with expertise in system design and scalable distributed systems, skilled in creating fault-tolerant microservices and optimizing algorithmic efficiency. Improved backend scalability for campus dining services at Texas Tech University by developing secure architectures and automating deployments. Previous roles at Amdocs and Accenture involved optimizing data flow and enhancing system reliability. Pursuing an M.S. in Computer Science, AWS Developer certified, eager to leverage skills in building efficient software solutions.

Education

TEXAS TECH UNIVERSITY **Aug 2023 - May 2025**

Master of Science, Computer Science (GPA: 3.9)

- **Coursework:** Operating Systems, Data Structures & Algorithms, Software Modeling & Architecture, Distributed Systems, Neural Networks, Advanced Database Management System, Parallel Programming

HINDUSTAN UNIVERSITY **Aug 2015 - May 2019**

Bachelor of Technology, Mechanical Engineering (GPA: 8.49)

- **Coursework:** Computer Programming, Mobile Robots, Cryptography, Automation & Robotics

Technical Skills

- **Core Technical Skills**: Data Structures & Algorithms, System Design, Object Oriented Programming, Distributed Systems, Database indexing, Database Design & Indexing, API Design Principles, Fault Tolerance & High Availability
- **Programming**: Java, JavaScript, Python, SQL
- **FrameWorks**: Spring Boot, Node.js, React, JSX, Tailwind CSS, HTML, CSS, TensorFlow, PyTorch
- **Database Management**: PostgreSQL, MySQL, MongoDB, Redis
- **DevOps & Cloud Tools**: Kubernetes, Docker, RedHat OpenShift, Jenkins, Kafka, AWS (EC2, S3, Lambda, RDS, CloudWatch, SNS, SQS)
- **Version Control**: Git, Github, Gitlab, BitBucket
- **Testing & Monitoring**: JUnit, Splunk, Kibana, Grafana, Prometheus
- **Software Engineering Practices**: Software Development Life Cycle (SDLC), Agile Methodology, Technical Documentation, Scrum Methodology, Problem Solving & Debugging

Experience

TEXAS TECH UNIVERSITY | *Full-Stack Developer & API Integrator* **Aug 2023 - Present**

- Developed robust Spring Boot microservices for payment transactions, dining plan management, and menu updates, enhancing backend scalability for high-traffic campus dining services.
- Implemented secure REST APIs using Spring Security, Hibernate, and OAuth2 with JWT, reducing transaction errors and streamlining dining operations.
- Integrated Kafka-based real-time messaging to synchronize order statuses and menu changes across dining locations, boosting operational responsiveness.
- Collaborated with Transact Mobile app team to merge backend services with mobile interface, elevating user engagement and ensuring seamless data flow.
- Engineered Node.js microservices for customer messaging and notifications, delivering low-latency, real-time communication between students and dining staff.
- Deployed microservices on AWS (EC2, S3, RDS, Lambda) and monitored performance with Grafana and Prometheus, optimizing system reliability during peak hours.
- Automated CI/CD pipelines using Jenkins, Docker, and Kubernetes, significantly reducing deployment time.
- Designed efficient indexing & caching strategies using binary search, hash maps, and B-Trees, reducing query execution time by 40%. Implemented multi-threaded processing for large dataset retrieval, improving performance by 3x.

AMDOCS | *Software Developer* **May 2022 - Jul 2023**

Developed and deployed software solutions at Amdocs, a leader in software and services for media companies.

- Developed intermediate layer for NextG CORE product using Java, Spring Boot, and PostgreSQL, improving data capture efficiency and facilitating seamless communication between digital and order management systems.
- Spearheaded data migration project for T-Mobile, ensuring accurate transfer and storage of customer data across legacy and new systems, preserving data integrity, and enhancing onboarding experience for new customers.
- Created REST APIs to monitor application fallout orders and automate ticket generation for support teams, improving issue visibility and accelerating response times for enhanced user experience.
- Implemented an automated retry mechanism for network issues in-store, reducing manual intervention and support ticket generation by 30%, optimizing in-store service operations.
- Translated user requirements into software solutions by designing, coding, modifying, and deploying applications, ensuring alignment with client needs and delivering solutions that met project objectives.
- Deployed APIs on Red Hat OpenShift Container Platform (OCP), ensuring seamless integration and compatibility within the testing environment, reducing deployment time, and minimizing integration errors.
- Presented product features and benefits to clients such as Syntel and Vodafone, effectively demonstrating application capabilities and driving a significant increase in customer engagement.

ACCENTURE | *Application Development Analyst* **Jan 2020 - Apr 2022**

Developed and optimized database solutions at Accenture, a global professional services company.

- Engineered multiple REST APIs using Java and Spring Boot, enabling efficient data retrieval for web-based applications and enhancing the management of vehicle-related information systems.
- Enhanced database performance by optimizing SQL queries, eliminating redundant data retrieval, and implementing caching, significantly reducing query execution time and improving system responsiveness.
- Facilitated collaboration among 80+ cross-functional team members, including Java, NET, ticket support, and SQL database teams, to align technical solutions with client needs, driving project success and innovation.
- Led production support by resolving 100+ QAT and production defects daily, using JIRA for tracking and Splunk for log analysis, minimizing downtime, and ensuring smooth post-deployment operations.

Academic Projects

AI-GENERATED IMAGE IDENTIFICATION | *Texas Tech University* **Aug 2024 - Present**

- Developed deep learning-based image identification system that distinguished AI-generated from real images, achieving 97.98% accuracy with DenseNet by benchmarking against ResNet and VGGNet on CIFAKE dataset.
- An engineered hybrid model integrating ResNet with attention mechanism, which enhanced feature extraction and boosted classification accuracy to 97.186%.
- Implemented Squeeze-and-Excitation layers to refine feature selection, reducing misclassification errors.
- Optimized model training using TensorFlow, PyTorch, and Apache Airflow with hyperparameter tuning on GPU-based platforms such as Google Colab and Texas Tech HPPC.
- Evaluated system performance with precision, recall, F1-score, ROC-AUC, and confusion matrix metrics, consistently outperforming baseline models.

LIBRARY MANAGEMENT SYSTEM | *Texas Tech University* **Jan 2024 - May 2024**

- Engineered interactive library management system with high security, integrated payment processing, online book access, customer-admin messaging, and PDF viewability.

MEMORY ADDRESS TRANSLATOR | *Texas Tech University* **Aug 2023 - Dec 2023**

- Developed memory address translator web application that converts memory addresses between virtual and physical formats, featuring automatic error correction for enhanced accuracy and user comprehension.
- Displays all necessary tables for respective values and provides converted addresses in hexadecimal and binary formats.