Sudhanva Rajesh

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EDUCATION

Texas A&M University — **College Station, Texas**
Master of Science - Computer Science, **GPA:** 3.83/4.0 — **Aug 2023 – May 2025**

PES University — **Bangalore, India**
Bachelor of Technology, Computer Science and Engineering, **GPA:** 9.11/10.0 — **Aug 2019 – May 2023**

TECHNICAL SKILLS

Languages: Java, Python, C, C++, SQL, JavaScript, TypeScript, HTML5, CSS, Ruby, TensorFlow, PyTorch
Web Development: Spring framework, Node.js, REST API Development, SOAP, MVC, Django, Flask
Infrastructure: AWS, Terraform, Docker, Kubernetes, Azure, Elastic Search, Git, Jira, Confluence, Scrum, Agile methodologies
Machine Learning: Natural Language Processing, Large Language Models, Text generation, Text embedding, Transformers
Databases & Search/Analytics: MySQL, MongoDB, PostgreSQL, Redis, DynamoDB, Cassandra, Hive, NoSQL.
Algorithm & Design: Algorithms, Design Patterns, Object-Oriented Design, Microservices, RPCs, SOLID, SDLC, OOAD.

WORK EXPERIENCE

JPMorgan Chase and Co | Software Engineering Intern — **Bangalore, India | Feb 2023 – May 2023**

- Architected a streamlined data migration tool, orchestrating the seamless transfer of on-premises data to the AWS cloud, focusing on meticulous data ingestion and enrichment.
- Designed an efficient Apache NiFi-based flow for automated post-enrichment data transfer from ElasticSearch to AWS S3 buckets, reducing transfer time by 35%.
- Implemented an optimized approach for bulk data transfer to S3, integrating AWS OpenSearch instances through triggered lambda functions, resulting in a 60% increase in transfer speed.

Reap Benefit | Youth Board Member — **Bangalore, India | Aug 2021 – Jan 2022**

- Engineered a pothole detection system using YOLO v5, achieving a 30% accuracy improvement and enabling swift user complaints through a chatbot to the municipal ward.
- Mentored a diverse college student group in the Solutions Community, driving a 70% increase in project completions while orchestrating workshops to enhance knowledge sharing and overall team collaboration.

Siemens Technology | Research Intern — **Bangalore, India | June 2021 – July 2021**

- Optimized the development of an impactful NLP pipeline, featuring a high-precision Semantic Role Labeling system and a robust Named Entity Recognition system, yielding invaluable insights from industry reports, with a 20% increase in accuracy.
- Elevated analytical capabilities by meticulously refining the knowledge graph creation process, by incorporating triplet extraction from the identified named entities and their semantic roles, empowering data-driven decision-making.
- Implemented a search system by leveraging sentence transformers and Elasticsearch indexing, achieving seamless retrieval of semantically matched reports with an impressive average response time of under 500 milliseconds.

PROJECTS AND RESEARCH

Rume: A Real-Time Chatroom Application | React, Socket.io, Node.js, Express, MongoDB Atlas, Docker, passport.js, Socket.io, Vercel

- Developed a microservices-based real-time chat application using Node.js and React, allowing users to create and join multiple chatrooms and interact with one another.
- Implemented WebSocket communication via Socket.io for instant messaging, active user tracking, and seamless room-based interactions, ensuring high performance and scalability.
- Designed and deployed a robust backend architecture integrated with MongoDB Atlas, enabling secure data storage and efficient retrieval, and Docker containers for isolated, scalable service management.

Connect4: A Service Management Platform | Heroku, PostgreSQL, Ruby on Rails, Cucumber, RSpec

- Developed a comprehensive platform allowing service providers to post services, set availability, and manage appointments, with a client interface for booking and tracking appointments.
- Built interfaces for admin-side profile customization and booking management, and client-side seamless appointment scheduling.
- Ensured reliability and performance with extensive testing using Cucumber and RSpec.

Text-Based Image Retrieval Using Captioning | CNN, GRU, BM25, NLP, Computer Vision, Flask — ICECCT 2021, IEEE Xplore

- Developed image annotation system using encoder-decoder model with VGG16 CNN encoder and GRU decoder with attention.
- Attained a remarkable 61% retrieval rate for exact image matches using Okapi BM25, and a 100% retrieval rate within the top 5 results for all remaining cases, showcasing a highly effective and precise image retrieval system.

Fitt: A Real-Time virtual gym trainer and posture corrector | React, Tailwind, Computer Vision, Vercel, Flask

- Spearheaded the implementation of real-time pose landmark detection, leveraging a pre-trained model for immediate feedback during exercises, markedly enhancing the user experience by enabling prompt corrections and refining workout techniques.
- Engineered a robust full-stack application that analyzes trainers' sample exercise videos and generates a set of personalized rules to train new users, driving efficient progress tracking and resulting in a highly adaptive and impactful training platform.

AWARDS:

JP-Morgan Code for Good Hackathon 2022 — First Runners up