Chethana Muppalam

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EDUCATION

Master of Science in Computer Science **Sep 2023 - Dec 2024**
Portland State University | Portland, Oregon GPA: 3.94/ 4.00
***Coursework**: Algorithms, Databases, Data Engineering, DevOps, AI, ML, CV, Deep Learning*

Bachelor of Engineering in Computer Science **Jun 2013 - May 2017**
Coimbatore Institute of Technology | Tamil Nadu, India GPA: 3.30/ 4.00

SKILLS

Programming Languages	:	Python, Java, C, JavaScript, TypeScript, HTML, CSS
Cloud and Database Platforms	:	MySQL, PostgreSQL, Redis, GCP, AWS (EC2, S3, CloudWatch, Lambda, DynamoDB, ElastiCache, DMS)
Frameworks and Libraries	:	Spring Boot, Flask, Node.js, React, Apache Kafka, TensorFlow, PyTorch, Gradio, Pandas
Software Development	:	Git, Docker, Kubernetes, CI/CD, Splunk, JUnit, Mockito, Jenkins, Hugging Face

EXPERIENCE

Senior Software Engineer
HCL Technologies, India **Sep 2019 - Nov 2021**
- Architected microservices to manage financial accounts for large-scale banking web apps, ensuring low latency and high availability.
- Developed REST APIs in Java using Sprint Boot, implemented test automation, and delivered features in cross-functional teams.
- Established CI/CD workflows for releasing and deploying Docker images to AWS EC2, reducing time-to-market from days to minutes.
- Spearheaded initiatives to enhance user experience, improving batch query tail latencies by 20% through MySQL DB indexing.
- Redesigned mortgage portal to withstand COVID-19 impact, benefiting over thousands of customers to reconfigure their due deadlines.

Associate Software Engineer
Exterro R&D, India **May 2017 - Aug 2019**
- Developed authentication and authorization modules in Java, thwarting attacks and unauthorized access in a public web portal.
- Built Email notification pipeline in E-Discovery management system using AWS services - S3, Lambda, ElasticCache, DynamoDB.
- Implemented MySQL database replication, leading to a significant improvement in query performance for data export tasks.
- Executed data migration from MySQL to DynamoDB via AWS DMS, and seamlessly onboarded users to new environment.

PROJECTS

Text Tune AI: Text-to-Music Generation | GenAI, LLM, NLP, Gradio, Python **Spring 2024**
- Built Text-to-Music generation model using MusicGen, an autoregressive transformer model from Meta's Audiocraft Library.
- Enhanced model inputs through Zero-shot prompting by integrating LLMs like GPT-3.5 and Gemini 1.0 Pro to extract music attributes.
- Evaluated the quality of generated music using the MusicCaps dataset, employing metrics such as CLAP, FAD, and SNR scores.

TriMet Route Insight Project (TRIP) | GCP, Kafka, ETL, PostgreSQL, Python **Spring 2024**
- Engineered ETL pipelines to manage 1 million+ records of real-time daily data utilizing Python libraries such as BeautifulSoup and Pandas.
- Automated operations by scheduling Cron Jobs, VM Schedulers, and Daemon Services to ensure continuous data flow.
- Enhanced data quality and integrity by cleaning the data extracted from various sources into PostgreSQL data warehouse using Psycopg2.
- Implemented data archival and encryption to securely store and manage cleaned data in GCS bucket.
- Visualized data using Mapbox and Folium tools to analyze and present actionable insights about ongoing TriMet Bus Trips.

Shop Easy: Student Pantry Management System | Python Flask, JavaScript, PostgreSQL, AWS **Fall 2023**
- Developed Pantry management system to streamline inventory and distribution for food pantry using Python Flask, JavaScript, PostgreSQL.
- Deployed web application on an AWS EC2 cluster with an Elastic Load Balancer, utilizing Kafka for the scalability of the system.
- Applied concepts of TDD, Scrum, XP core values and SOLID principles during development, effectively managing product backlog.

Block Race: Multiplayer Network game with chat | Python, TCP, Socket Programming **Fall 2023**
- Conceived and architected a multiplayer game in Python using canvas, implementing game rules and threaded clients.
- Developed an in-game chat feature for player communication via TCP and socket programming.
- Integrated auto-reconnection and crash notification mechanisms to inform users of downtime or unresponsive clients/servers.