

Chethana Muppalam

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EDUCATION

Master of Science in Computer Science

Portland State University | Portland, Oregon

Sep 2023 - Mar 2025

GPA: 3.94/ 4.00

Coursework: Algorithms, Databases, Data Engineering, DevOps, AI, ML, CV, DL

Bachelor of Engineering in Computer Science

Coimbatore Institute of Technology | Tamil Nadu, India

Jun 2013 - May 2017

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 Spring 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, JS, 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.