

MANJUNATHAN CHETTIAR

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Back-end Software Engineer with 1.5+ years of experience in designing, developing, and optimizing scalable back-end systems. Proficient in Python, Fast-API, Django, Celery, and SQL with expertise in RESTful API development, microservices, and data processing pipelines. Strong background in asynchronous task execution, database optimization, and cloud-based deployments. Passionate about building high-performance systems with efficient architecture and seamless integrations.

WORK EXPERIENCE

Software Engineer - Xecutables Pvt. Ltd, Bengaluru (Sep 2023 – Present)

- Developed a Python-based Question Answering chat-bot using GPT-3, Fast-API, and Redis, enhancing response accuracy by 25%.
- Optimized LLM API latency using asynchronous processing (Celery), reducing overhead by 30%.
- Designed RESTful APIs for seamless chat-bot integration with external data sources.
- Implemented error handling and logging mechanisms to improve system reliability.

Software Engineer Intern - Xecutables Pvt. Ltd, Bengaluru (Feb 2023 – Aug 2023)

- Built an anomaly detection system using Python, SQL, and Elasticsearch, reducing security risks by 30%.
- Integrated multi-database data aggregation pipelines, improving data accessibility and consolidation.
- Developed automation scripts for anomaly detection, streamlining security monitoring.
- Optimized database queries using indexing and partitioning, reducing retrieval time by 40%.

SKILLS

Programming Languages: Python (Backend), Go (Backend) , C/C++, HTML, CSS

Databases: MySQL, SQLite, Elasticsearch, SurrealDB

Frameworks: FastAPI, Flask, Django, Celery, GraphQL

Libraries: Pandas, NumPy, TensorFlow, OpenCV

Tools & Technologies: Apache Nifi, Redis, RabbitMQ, JMeter, Git

DevOps: Docker, Kubernetes, CI/CD

PROJECT EXPERIENCE

Xecutables Pvt. Ltd, Bengaluru

Anomaly Detection

- Architect and deployed a comprehensive anomaly detection system utilizing Python, enhancing security by reducing risks by 30%.
- Integrated diverse databases to ensure robust data aggregation and analysis.
- Employed SQL for efficient data consolidation and retrieval processes.
- Developed Python automation scripts to streamline data processing and anomaly identification.
- Enhanced system reliability and responsiveness through optimized data workflows and real-time monitoring capabilities.

Object Detection using Custom Dataset

- Developed and trained a computer vision model utilizing Python, leveraging TensorFlow and OpenCV for object detection and localization within images.
- Achieved a 90% accuracy rate by employing custom datasets tailored for specific use cases.
- Implemented data preprocessing and augmentation techniques to enhance model performance.
- Optimized model architecture and hyperparameters to improve detection precision and computational efficiency

QA Chatbot

- Developed a Python-driven Question Answering chatbot leveraging a Large Language Model (LLM) like GPT-3.
- Enhanced response accuracy by 25% through advanced prompt engineering and fine-tuning techniques.
- Integrated Ollama API for seamless interaction and data exchange.
- Implemented robust error handling and optimized latency for improved user experience.
- Utilized natural language processing (NLP) techniques to refine context understanding and response generation.

Time-series Forecasting

- Designed and implemented a time-series forecasting model in Python to predict daily employee counts.
- Utilized libraries such as Pandas and NumPy for data manipulation and preprocessing.
- Applied statistical methods and machine learning algorithms to enhance prediction accuracy.
- Conducted exploratory data analysis to identify trends and seasonality in employee data.
- Validated model performance using metrics like Mean Absolute Error (MAE) and Root Mean Square Error (RMSE).

Intelligent Event Stream Pipeline using Ollama

- Utilizes Ollama LLM integration for intelligent event summarization, efficiently processing and contextualizing real-time event data streams.
- Implements a robust configuration management system using AppConfigProvider, enabling dynamic configuration of Ollama host and model parameters for flexible deployments.
- Incorporates comprehensive logging with a custom fabric logger, ensuring detailed system monitoring, performance tracking, and debugging capabilities.
- Enhances event data with AI-generated summaries while preserving original event details through structured dictionary merging techniques.
- Features a modular pipeline architecture, facilitating seamless integration with various LLM services and event processing components for enhanced scalability.
- Supports storing and retrieving chat interactions in Elasticsearch, Redis, and file storage, enabling user-configurable persistence options.
- Implements efficient session management, allowing retrieval of historical chat context across multiple sessions, ensuring personalized and context-aware responses.

EDUCATION

Dayananda Sagar University, Bengaluru

Master of Computer Applications (MCA) - Feb 2021 to Jun 2023

Veer Narmad South Gujarat University

Bachelor of Computer Applications (BCA) - Jun 2018 to Mar 2020