Ishwar Singh Shekhawat

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Professional Summary

I am a highly skilled Full stack Python Developer with over 6 years of experience in designing and implementing scalable web applications and backend systems. Proficient in Django, FastAPI, Flask and React, with extensive expertise in RESTful API development and front-end UI integration, and management. Experienced in event-driven architectures, real-time systems and asynchronous processing with Celery, and distributed data processing using PySpark. Adept at leveraging cloud services such as AWS for storage, computing and deployment, including hands-on experience with AWS Lambda, EC2, Cognito, S3, and API Gateway. Strong background in data pipeline development and integrating various data sources, real-time data streaming with Kafka and managing data lakes. Proficient in Data Structures and Algorithms, with experience in designing and optimizing efficient solutions for complex problems. I have experience with Implementing and optimizing CI/CD pipelines using tools like GitHub Actions and Docker, automating the process of testing, building, and deploying code to improve efficiency and reduce manual intervention. I also have experience with developing AI applications using langchain and langGraph frameworks integrating Openai API and developing LLM-powered apps with retrieval-augmented generation (RAG) and MCP servers. I have a strong grasp of data structures, algorithms and software design principles. I am a problem solver by nature and a first principles thinker.

Work Experience

Helixbeat | Remote
Senior Software Engineer | 07/2024 - 05/2025

- Designed and developed REST API endpoints for the HelixBeat healthcare system using Django REST Framework, enabling secure patient data retrieval and lab result management for multiple client applications.
- Architected and implemented a comprehensive authentication system using Django REST Framework, integrating OAuth2 and OpenID Connect protocols with JWT based token handling, role based access control (RBAC), device tracking, login analytics, administrative monitoring, and token blacklisting for enhanced security and compliance. The system allows users to securely authenticate and manage sessions across multiple devices, while administrators can monitor login events, track suspicious activity, and enforce secure access policies. Key enhancements include Token Blacklisting , Login Analytics and Alerts, Rate Limiting and Throttling.
- Resolved a critical concurrency issue in the appointment booking module by implementing distributed locking using Redis , eliminating double-bookings and ensuring data consistency under simultaneous request loads.
- Developed and deployed a TF-IDF based machine learning model that predicts the type of specialist doctor a user should consult based on input symptoms, utilizing logistic regression for multi-class classification, ensuring real-time predictions for users seeking medical consultation recommendations.
- Orchestrated complex event-driven data transformation pipelines using Apache Airflow on Kubernetes, orchestrating Spark jobs for large scale healthcare data transformations (CSV, JSON, HL7, FHIR). Integrated Celery Beat for scheduled workflows, and utilized the Spark Kubernetes Operator to manage distributed processing in cluster mode. Designed retry mechanisms and circuit breakers for handling downstream system failures. Implemented enterprise integration patterns using Apache Camel and Kafka for reliable message routing and transformation.
- Managed Kubernetes infrastructure on AWS using helm charts, ensuring high availability and scalability; implemented CI/CD pipelines with GitHub Actions for automated builds and deployments, integrated Prometheus and Grafna for proactive health checks, metrics collection, and cluster monitoring to ensure system uptime and performance.

Utah Tech Labs | Utah
Software Developer | 05/2021 - 04/2024

- I led the development of a sophisticated web application that allows users to upload images for processing and analysis. I designed and implemented the backend using FastAPI, ensuring high performance and ease of integration with other services. The application includes functionality for users to upload images, which are securely stored in AWS S3 for scalable and durable storage. To manage the image upload events, I implemented an event-driven architecture using Apache Kafka, streaming these events from FastAPI to the processing pipeline for reliable and efficient data flow. Leveraging PySpark, I handled distributed processing of uploaded images, performing tasks such as image resizing, filtering, and feature extraction. Additionally, I utilized Celery for managing asynchronous tasks, ensuring smooth and responsive user interactions while handling intensive image processing workloads. The processed images and metadata were integrated into a data lake on AWS, enabling advanced analytics and machine learning applications.

- Led the development of a comprehensive travel planning application designed to provide users with real-time travel information, booking services, and personalized itineraries. Developed the backend using Django and Django Rest Framework (DRF) to manage user data, travel itineraries, and API interactions.Employed Redis-backed rate limiting and per-user caching, cutting average API response times from 450ms to 120ms under load.Achieved 95% test coverage across the travel app by authoring over 120 unit tests with Pytest, leveraging fixtures to validate serializers, views, and utility functions in isolation.
- I was involved in development of a sports fantasy app similar to Dream 11, where users create teams during tournaments and are ranked based on their selected teams' performances. The application was built using Flutter for a seamless cross-platform user experience. The backend was developed using AWS Lambda for serverless computing, AWS Cognito for user authentication, and API Gateway for managing API requests. Asynchronous tasks were managed using Celery and Django, allowing users to make team selections at specific times efficiently. The app also utilized AWS S3 for secure and scalable data storage, ensuring high performance and reliability throughout the user engagement process.
- Implemented the APIs for a pantry project (an LLM-powered app with retrieval-augmented generation (RAG)) , that stored user's custom food recipe , allowed them to edit those recipe and add pictures , pictures were stored in aws s3 , cognito was used for authentication. Integrated LangChain and a vector database (Pinecone) to parse uploaded recipe PDFs and allow users to ask natural language questions like "What can I cook with potatoes, onions, and eggs?" by matching ingredients against stored recipes using semantic search and Openai API. Next.js was used as the front-end, using React Hooks and Tailwind CSS, achieving a Lighthouse Performance score of 90+ and reducing TTI to around 50 ms on average devices.
- Built the front-end UI for the pantry project using React and Next.js, designing responsive interfaces for creating, editing, and browsing user-generated recipes, implemented image and PDF upload workflows with AWS S3 integration, developed intuitive components for displaying AI-generated recipe matches and semantic search results, and optimized user experience through dynamic routing, server-side rendering and conditinal UI updates using hooks, context and React state management.

Turing.com
Django Developer | 02/2020 - 03/2021

- Helped create a stock trading bot, Developed and tested trading strategies based on market indicators like Moving Averages, RSI, MACD, statistical models to predict stock price movements and optimize buy/sell decisions. Built a backtesting framework to simulate the performance of trading strategies using historical data, optimizing strategy parameters to maximize profitability and reduce risks. Designed the bot to interface with brokerage platforms, with full logging of trades for transparency and auditing.
- Designed and developed a robust ticket booking system for auditorium events, allowing users to search for events, select seats, and purchase tickets with a seamless user experience. (front-end in next.js and the Rest API in DRF).Also Integrated the payment system using stripe API.
- Implemented a drop-box like service.
- Collaborated in the development of a quizzing app for schools, aimed at enhancing student engagement and learning through interactive quizzes and assessments. The app allowed teachers to create and manage quizzes, while students could participate in quizzes, track their progress. Designed and implemented an intuitive teacher dashboard that allowed teachers to easily create, organize, and assign quizzes to individual students or classes. Teachers could set custom question types like multiple choice, true/false, short answer and define time limits for each quiz.

Drone sky lighting
Python Developer | 08/2018 - 11/2019

- Python code for syncing drones using dronekit-python.
- The drone runs its own firmware (ArduPilot or PX4), which listens for commands from the ground control station and executes actions such as changing flight modes, moving to a location, or taking off.

Skills

Languages : Python , Javascript , Go , C, sql , html and css, TypeScript, Database : PostgreSQL, Cassandra, Mongodb, MySQL, NoSQL, Frameworks : Django , DRF , FastAPI , Flask, Object Oriented Programming, Cloud : AWS , GCP, Data Engineering tools : Apache Kafka , Spark , Flink, AWS : API Gateway , lambda , Cognito , ec2 , ECS , RDS , S3 , Message queues : Redis , RabbitMQ, Celery, familiarity with : react.js , next.js , node.js, Machine learning : Tensorflow , Scikit-learn ., Other tools : Linux , Docker , Git , Github , CI/CD, Devops, Kubernetes, React, Airflow (ETL pipeline), DynamoDB, Azure, Terraform, Pytest, Unit Testing, gRPC, langchain, langGraph, LLM, Ai agents , Retrieval Augmented Generation (RAG), Openai API, MCP server, AWS Bedrock, AWS SageMaker, Vertex AI, GitHub Actions, Vector Database, Pinecone

Education

IIT Roorkee | Roorkee, Uttrakhand
B.Tech | 05/2018
Relevant courses

- Algorithms and Data Structure
- Introduction to programming in C
- Web Development
- Machine Learning

References

Guru Rajagopal (CTO , Helixbeat)
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