

KUSHPAL YADAV

Lead Backend Engineer | Cloud System Design Expert

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Backend Engineer with 5+ years of experience building scalable cloud-native systems, architecting secure microservices, and leading agile teams. Skilled in Python, FastAPI, GCP, AWS, and machine learning. Known for improving deployment efficiency by 30%, publishing research in brain imaging, and driving performance optimizations at scale.

Education / Courses

Master of Technology

Indian Institute of Technology Gandhinagar [Computer Science]

📅 07/2018 – 07/2020 📍 Gujarat, India

Bachelor of Technology

Tezpur University [Computer Science]

📅 07/2013 – 07/2017 📍 Assam, India

Microsoft Certification

Exam 98-381: Introduction to Programming using Python

📅 07/2020 – 09/2020

Experience

Liftoff Software Pvt. Ltd

Software Engineer

📅 08/2024 – Present 📍 Bangalore, India

- Designed and deployed scalable GraphQL APIs and microservices using FastAPI and Python.
- Built and maintained CI/CD pipelines with GitHub Actions and improved deployment efficiency by 30% through optimized CI/CD workflows.
- Integrated Cloud Run for seamless deployment of containerized applications on GCP.
- Applied advanced web scraping and data processing techniques, optimizing data pipelines.

K12 Techno Services Pvt. Ltd

Software Developer

📅 09/2020 – 07/2024 📍 Bangalore, India

- Spearheaded the revamp of a core ERP platform, increasing overall system efficiency by 18%.
- Collaborated with a team of 8 engineers using Agile practices to deliver features every 2–3 week sprint.
- Developed and maintained secure REST APIs with DevOps and enhanced backend performance by 15%.
- Transitioned to the ERP project, demonstrating expertise in Python and Django, and React.js leveraging API Gateway to translate problem statements into efficient programming logic, skillfully identifying and resolving bugs, and contributing to robust system design.
- Improved team onboarding documentation and testing processes, boosting feature delivery confidence.

Achievements

- Developed an automated exam seating system at IIT Gandhinagar to enforce social distancing during COVID-19, ensuring safe exam operations.
- Secured a percentile of 98.47% in GATE 2018
- Spot Award (2022) – For excellence in development reliability engineering at K12 Techno Services
- Published presented research at Brain Informatics Conference 2021 (2 lightning talks)
- Built ML models (SVM, Random Forest, Naive Bayes) from scratch as part of research and academic work

Skills

Languages: Python, Node.js, React.js, JavaScript, Bash, PHP

Frameworks: Django, FastAPI, Flask, Pytest

Tools: Docker, Jenkins, GitHub Actions, Apify, Postman, Swagger

Cloud/DBs: AWS, GCP, MongoDB, Redshift, PostgreSQL, Grafana

Projects

ERP System

📅 04/2021 – 08/2024 📍 K12 Techno services, Bangalore

- Developed a REST API for fee payments across multiple gateways, enabling administrators to monitor transactions and reports for over 100K monthly payments.
- Designed 15+ custom modules with continuous integration on AWS and GCP servers, with lambda and google functions, aligning them precisely with project requirements to guarantee smooth operation and effective data management.
- Led the development of the project's database and REST API, employing technologies such as Django Rest Framework (DRF), Google Cloud Storage, microservices architecture. Ensured seamless integration and efficient data management throughout the implementation.
- Drafted 20+ standalone modules within a project, integrating them seamlessly through Amazon Web Servers (AWS) and Google Cloud Platform (GCP) with various microservices. These modules were meticulously designed to optimize functionality and enhance the overall scalability of the project.

M.Tech Thesis

A Novel Approach Towards Early Detection of Alzheimer's Disease Using Deep Learning on Magnetic Resonance Images (Published, Brain Imaging: 08/2021)

📅 07/2019–08/2020 📍 IIT Gandhinagar, India

- Designed and deployed a high-performing 2D CNN model for Alzheimer's Disease classification using MR images. The model outperformed state-of-the-art methods with superior accuracy, sensitivity, and specificity across different brain planes.
- Preprocessed T1-weighted MRI volumes from the ADNI database into sagittal, coronal, and axial slices, totaling 94,536 slices. Eliminated non-informative slices, addressing challenges like head movement and noise.

TrendSense

📅 08/2024 – Present 📍 quilt.ai, Singapore

- Developed TrendSense Platform: Built a system to collect and analyze global trends from TikTok, YouTube, and Instagram using Apify and public data sources.
- AI-Powered Analysis: Utilized Gemini AI to process raw trend data into structured insights for clients in beauty, cosmetics, and travel sectors.
- Backend Implementation: Engineered backend services with Python, Node.js, and a data migration tool for seamless data handling and enhanced backend performance by 15%.
- Microservices APIs: Deployed scalable microservices on Google Cloud Run with GraphQL and FastAPI for efficient data access.
- CI/CD Automation: Implemented CI/CD pipelines to streamline development, testing, and deployment, ensuring reliable delivery.

Cloud Storage System (Multi-Client)

📅 08/2024 – Present 📍 Internal Tool – Liftoff, Bangalore

- Engineered a TCP-based cloud storage system in C with concurrent user handling and secure access control.
- Conceived, adapted, and executed a multi-client cloud storage system proficient in efficiently managing concurrent requests. Utilized skills in C programming and implemented a client-server based TCP architecture for optimal system functionality.
- Implemented server-side functionality to maintain individual user log files, ensuring strict access control to prevent unauthorized reading or writing of other user's files.