ABHINAV KUMAR

Senior Software Engineer   Sponsorship Require

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PROFESSIONAL SUMMARY

Results-driven Senior Software Engineer with 6+ years of experience building scalable, secure, and high-performance web applications including 4 years in the hospitality domain. Strong expertise in Python 3, Flask, SQLAlchemy, and RESTful API design, with a proven record of optimising backend systems for speed, reliability, and maintainability. Skilled in database management across PostgreSQL and Redis, including performance tuning and operational stability. Adept at leading development standards through CI/CD pipelines, peer reviews, automated testing, and workflow optimisation. Experienced in cloud environments (AWS), containerisation (Docker), and modern DevOps practices, ensuring smooth, stable deployments and high service uptime. Known for mentoring junior developers and fostering a culture of learning, collaboration, and technical excellence. Comfortable partnering with cross-functional teams to shape features, drive automation, and deliver business-impacting solutions on time. Strong problem-solving mindset with a commitment to clean code, continuous improvement, and staying current with emerging technologies to enhance platform scalability and performance.

EDUCATION

Master of Science – STEM: Management and Information Systems   09/2022 - 09/2023
Cranfield University - Cranfield, UK - 2:1

- **Course**: Data Analyst with AI, Enterprise Management, Enterprise systems, Digital Engineering, Supply Chain, Operations Management, Software Engineering
- **Thesis**: Digitalisation and Automation of Space Engineering Task – Geometry Construction for Mechanical Analysis using PythonOCC and Artificial intelligence
- **Group Project**: Thermography based Inspections

Bachelor of Technology - EEE   07/2013 – 05/2017
SRM University, India – 72%

WORK HISTORY

Aspurian, (Homestay) Milton Keynes, UK   05/2024 – Present
Senior Software Developer – Data and AI

- Architected and Led the development of scalable web applications using Python 3, Flask, and SQLAlchemy, ensuring high performance, clean architecture, and maintainable codebases
- Led, designed, build and maintained an efficient and reliable data platform, streamlining end-to-end processes and automating Data pipeline workflows
- Designed and optimised RESTful APIs powering core **Homestay features**, improving response times, reliability, and overall platform efficiency
- Architected and built an **AI-powered customer-facing** chatbot using a **Knowledge Graph + Embeddings + Llama 3.1**, enabling intelligent query handling, automated support, and enhanced customer experience
- Mentored **junior developers**, driving strong engineering standards through peer reviews, CI/CD pipelines, automated testing, and continuous learning
- Optimised PostgreSQL and Redis databases, implementing performance improvements and scalable data access patterns across Homestay's backend services
- Implemented containerisation strategies using Docker and Kubernetes to streamline deployments and deployed the application into AWS following CI/CD principles

Nitrexo - Midleton, Cork, Ireland (WFH)   05/2023 - 09/2023
AI Software Engineering Intern – Thesis

- Took ownership by designing and developing well-tested, efficient **AI dashboard for automating space Engineering Tasks for complex CAD model** following Agile development life cycle
- Created the data pipeline to extract the data from the various sources and processed the new data to the model
- Implemented a continuous integration and deployment Machine learning pipelines that reduced the time taken to deploy new features from days to hours, **accelerating time-to-market by 60%.**

- Built scalable AI infrastructure and provided software business solutions to the Product owner and the stakeholders

- Experienced in leveraging prototyping and sketching techniques to quickly iterate ideas and concepts, fostering innovation and driving product development

- Developed API–driven robust standard solution for space engineers for satellites thus **saving a huge amount of time**

- Deployed applications to AWS production environments and performed maintenance tasks such as monitoring, troubleshooting, and performance optimization

Altimetrik India Pvt Limited (Trivago)- Bengaluru, India   10/2021 - 09/2022
Senior Software Engineer

- Developed a high-performance **Trivago customer review and feedback analysis application**, enabling accurate processing of guest reviews and improving trust by detecting misleading or low-quality feedback

- Conducted weekly data reviews to analyse customer sentiment, identify recurring stay-related issues, and highlight service improvement areas for hotel partners across Trivago's global network

- Collaborated with Trivago's international engineering teams to design and deploy Django-based services and supporting microservices on AWS using EC2, Lambda, and API Gateway

- Built and maintained large-scale infrastructure components for review ingestion, text processing, and data analytics, writing clean and maintainable code across multiple programming languages

- Worked closely with Product and Project Managers to design new features for review scoring, feedback classification, and customer experience dashboards following agile methodology

- Collaborated with Product, Ops, Growth, and CS teams to shape feature design, refine workflows, drive automation, and deliver stable, high-quality releases via refined deployment pipelines

- Improved team collaboration by supporting **junior developers** with writing specifications, reviewing code and understanding the review-processing pipelines - leading to a 40% reduction in delays and a 25% improvement in delivery timelines

- Implemented containerisation strategies using Docker and Kubernetes to streamline deployments and ensure consistent review system behaviour across environments

- Managed system integration, configuration, lifecycle management, and event-driven data flows across Trivago's customer review and feedback platform

Clarivate Analytics (Cleartrip)- Bengaluru, India   03/2021 - 10/2021
Software Developer

- Developed and maintained high-quality Django applications powering **Cleartrip's travel booking platform**, supporting end-to-end workflows across flights, hotels, and reservations
- Designed and integrated machine learning solutions, including a user booking-propensity model and personalised **recommendation engine**, significantly improving customer engagement and conversion rates
- Implemented **RESTful APIs and messaging-based integrations** connecting airline/hotel partners, payment gateways, and internal booking engines, ensuring seamless, reliable data exchange
- Engineered efficient data models and optimised MySQL performance by writing complex queries and tuning schema design for high-volume travel and user-activity workloads
- Built and enhanced the member loyalty and rewards system, enabling users to earn, redeem, and track points across bookings, promotions, and partner programs
- Deployed and managed applications on Azure using cloud-native services to deliver scalable, resilient, and globally distributed travel experiences
- Utilised monitoring and observability tools such as **Grafana** to track application performance, identify anomalies, and maintain high system reliability
- Followed software engineering best practices including Git-based version control, unit testing, CI/CD automation, and secure coding standards aligned with enterprise travel-tech requirements
- Actively participated in agile ceremonies, design discussions, and peer code reviews, ensuring consistent engineering quality and on-schedule feature delivery
- Contributed to documentation, internal tooling, and continuous improvement initiatives to enhance team productivity and knowledge sharing

Anora Semiconductor Labs - Bengaluru, India   05/2020 - 01/2021
Software Engineer

- Designed and developed scalable, secure and high-performance **web application Analytics tool** and services using flask

- Took an active part in discussions to improve UI/UX through decision making thus being an active member of the start-

up company

- Lead technical design discussions for medium to large-scale projects
- Created CI/CD pipeline to automate the process

DXC Technology (Yatra.com) - **Bengaluru, India**   10/2018 - 04/2020
ITO Svc Delivery Consultant

- Built an **ML-based hotel booking** application that analyzed user travel patterns, preferences, and seasonal pricing to predict future booking costs and generate personalized hotel recommendations, significantly improving search relevance and customer engagement
- Implemented **RESTful APIs** and **messaging-based integrations** to seamlessly interface with upstream reservation systems, pricing engines, and partner hotel inventory platforms
- Participated in code reviews, architectural discussions, and agile ceremonies to ensure alignment with sprint goals and engineering best practices
- Collaborated closely with SRE and production monitoring teams to maintain system reliability, high availability, and performance across customer-facing booking services
- Worked extensively with relational databases (**Postgres**) and AWS services **including S3, EKS, SageMaker, and Bedrock to build scalable backend and ML-driven recommendation pipelines**
- Followed software engineering best practices using Git, automated testing, and CI/CD pipelines to ensure clean, maintainable, and production-ready code

Disys - **Chennai, India**   05/2017 - 01/2018
Trainee Software Engineer

- Designed and developed a **web-based Financial Graph tool** for data analysis and Visualization
- Reviewed, validated, and automated testing to improve code quality.
- Used Apex graph in flask framework to analyse the data
- Improved HR recruiting system from **55% to 80%**

Skills

- **Languages**: Python, C#, JavaScript, HTML 4, CSS, React
- **Frameworks/Tools**: Fast API, Django, .Net, Scikit-learn, TensorFlow, Flask, PyTorch, Hugging Face Transformers, Streamlit, Langchain, LangGraph
- **ML & AI:** LLMs (GPT-4, Llama3, Nomic-Embedded-Text, DeepSeak), NLP, OpenCV, Machine Learning Pipelines, Model Monitoring, Embeddings
- **Database:** MySQL, PostgreSQL, MongoDB, SQLite
- **Data Tools:** Pandas, NumPy, Seaborn, Matplotlib, PySpark, Databricks, DataLakes, OpenCV
- **Cloud & MLOps:** AWS, GCP, Azure, Lambda, Terraform, CI/CD, Azure DevOps, Ansible
- **Databases:** PostgreSQL, MySQL, SQLite
- **Practices:** Version Control, Test-driven Development (TDD), Agile/Scrum, API Development
- **Others –** Datawarehouse, Code Reviews, TDD, AJAX, Airflow, Grafana, OOPs, DOM manipulation, Docker, Kubernetes(K8), Code Quality, Linux, Windows, Data Structure, Object- Oriented Programming/Design, System development, Unix shell scripting, System Design, Web scraping, ORM, Data Modelling, Multithreading, System integration, Redis, Kafka, Bitbucket, GitHub, Jira, Jenkins, IDEs
- **AI Tools** - ChatGPT, Claude AI, Github Copilot