

Vishal Kumar Senthil Kumar

Senior Python Developer

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Highly skilled Python Developer with 4+ years of experience delivering scalable backend solutions and GenAI-powered applications for enterprise clients including Bank of America. Proven expertise in building robust data engineering pipelines, optimizing system performance, and implementing modern development practices. Strong track record of mentoring teams and collaborating with stakeholders to deliver high-quality solutions that meet complex business requirements.

Top Skills

- **Programming Languages:** Python, SQL, Javascript, TypeScript, Bash script.
- **Backend Development:** FastAPI, Flask, Django Framework, REST API, Nginx.
- **Databases/Storage:** MySQL, PostgreSQL, Redis, MemCache, MongoDB, DynamoDB, Indexing, Cataloging, Sybase, IBM DB2.
- **Cloud:** AWS, S3, Athena, SageMaker, Lambda, DynamoDB, CloudWatch, ECS, EKS, EMR, CloudFormation, Redshift, SNS, GCP, Azure.
- **CI/CD (Continuous Integration/Continuous Deployment):** Git, Jenkins, Docker, Kubernetes, Ansible.
- **Python Libraries:** PySpark, Pandas, Asyncio, NumPy, Airflow, Matplotlib, Seaborn, Plotly Dash, Requests, BeautifulSoup.
- **LLM & Gen AI:** LangChain, LangGraph, LangChain Expression Language (LCEL), RAG (Retrieval Augmented Generation) pipelines, Large Language Models (Llama, OpenAI, Gemini), Prompt Engineering, Transformers, LangSmith, ReAct, Multi-agent architectures, Agentic AI.
- **Vector Databases & Retrieval:** Pinecone, FAISS, ChromaDB, Weaviate, Document Loaders, Embedding Models, Chunking Techniques.
- **Data Engineering:** ETL/ELT, Data Pipelines, Data Ingestion, Data Transformation, Apache Spark, Data Build Tool (DBT).
- **ML/Data Science:** TensorFlow, Scikit-learn, XGBoost, LightGBM, Supervised & Unsupervised Learning.
- **Project Management:** Agile Methodology, JIRA, Scrum.
- **Banking Development Technology:** Quartz

Work Experience

Senior Python Developer

Tata Consultancy Services - Bank of America

07/2023 - 09/2024

Sector: Investment Banking

- Designed and implemented scalable RESTful APIs using **Django Rest Framework** and **Nginx**, supporting over 1 million daily transactions and reducing inter-service latency by 25%.
- Supported and enhanced FX Options trading and pricing systems on **Bank of America's Quartz platform** (Python), ensuring 99.9% uptime and high performance for front-office trading.
- Delivered system-level solutions for risk management and trade settlement using **Python, PostgreSQL**, and **Kafka**, reducing trade settlement errors by 30%.
- Optimized SQL stored procedures with **PostgreSQL** and **MySQL**, improving query performance by 40% and enabling real-time analytics for trading operations.

- Automated ETL workflows with **Python**, **Airflow**, and **AWS Lambda**, reducing data processing time by 30% and ensuring 99.9% accuracy in daily financial reporting.
- Developed a Value at Risk (VaR) application in **Python** leveraging **Pandas** and **NumPy**, achieving 95% accuracy in market trend forecasting.
- Implemented event-driven architectures using **Kafka** and **Celery**, increasing system throughput by 50% and enabling real-time data streaming.
- Mentored 5+ junior developers, promoting best practices in **Git**, **Docker**, and **Jenkins**, resulting in a 20% reduction in production bugs.
- Authored and maintained technical documentation with **Confluence** and **Markdown**, reducing onboarding time for new team members by 35%.
- Established logging and monitoring frameworks using **CloudWatch** and **Prometheus**, achieving 99.9% system uptime and enabling proactive incident response.
- Collaborated with stakeholders using **JIRA** and **Agile** methodologies to resolve data infrastructure challenges and align technical solutions with business goals.

Python Engineer

Roanuz Software Private Limited

03/2022 - 07/2023

- Co-developed the Collaborative Live Sports Editor using **FastAPI**, **Pydantic**, and **Redis**, supporting over 100,000 concurrent users with sub-200ms response times.
- Designed and deployed a machine learning model (Random Forest) in **Scikit-learn** for real-time, ball-by-ball cricket match win prediction, achieving 92% accuracy.
- Automated event-driven workflows using **AWS Lambda** and **SNS**, reducing manual intervention by 40% and increasing system responsiveness.
- Orchestrated and managed 50+ data pipelines with **Apache Airflow**, ensuring 99% on-time data delivery for large-scale sports data processing.
- Built scalable ETL pipelines with **PySpark** and **PostgreSQL**, processing over 10 TB of data monthly from diverse sources.
- Developed and optimized big data ingestion frameworks using **Apache Spark (PySpark)**, reducing data curation time by 35%.
- Ensured code quality and reliability through **Test Driven Development (TDD)** and unit testing with **pytest** and **Pydantic** validation, achieving 95% test coverage and minimizing production defects.

Project Engineer

Wipro Technologies

11/2020 - 03/2022

- Engineered data extraction and NLP platform using **Python**, **spaCy**, **requests**, and **matplotlib** to analyze webinar data from 500+ URLs, generating insights and visualizations that increased stakeholder engagement by 30%.
- Designed and implemented microservices architecture with **Flask**, **Docker**, and **MongoDB**, integrating 5+ databases and reducing system downtime by 20%.
- Drove CI/CD adoption by configuring pipelines with **Jenkins** and **GitHub Actions**, reducing deployment failures by 40% and accelerating release cycles from bi-weekly to weekly.
- Applied **Test Driven Development (TDD)** and unit testing with **pytest**, achieving 90% test coverage and ensuring high reliability in production releases.

- Collaborated with cross-functional teams using **JIRA** to translate business requirements into technical deliverables, ensuring smooth project delivery.

Certifications

1. LangChain Academy: Mastering LangGraph & Agentic Workflows.
2. AI Agents Automation from Udemy.
3. Master Apache Spark using Spark SQL and PySpark 3.
4. Developing Autonomous AI Agents using LangGraph.

Projects

1. RAG-based Knowledge Assistant.
2. Multi-Agent Customer Support System.
3. Intelligent SQL Query Builder using LangChain.
4. Cricket Match Live Win Predictor.

Education

- **MSc Data Science**, University of Hertfordshire, Hatfield, United Kingdom, 2025

Awards and Recognitions

- Inspiring Performer Award from Wipro Technologies.
- On the spot award in TCS
- Star of the month