Manik Malik

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Professional Summary

Software Engineer with experience in designing scalable cloud-native systems, optimizing high-traffic APIs, and reducing costs through infrastructure efficiency.

Education

M.Sc. Computational Engineering   Oct 2022 – Oct 2025
University of Erlangen-Nuremberg, Germany

B.Eng. in Electronics & Communication Engineering   Jun 2017 – May 2021
Panjab University, India

Experience

Werkstudent, Software Engineering & Automation   Jan 2023 – Present
Siemens AG, Nürnberg, Germany

- Designed and developed 10+ full-stack internal tools using Java, Python (Flask), and JavaScript in an agile team, streamlining engineering workflows.
- Integrated RESTful APIs to fetch and analyze data from Jira, GitLab, Saucelabs, JMeter, and ArgoCD, improving traceability and debugging efficiency.
- Built and deployed Fast RCNN based AI visual testing tool replacing current Sikuli system.
- Automated CI/CD pipelines with GitLab, orchestrating test, build, and deployment processes for cross-platform environments.
- Refactored core components of legacy tools to improve runtime efficiency (up to 3x speedup) and reduce memory overhead.
- Developed interactive Confluence dashboards with AlaSQL and dynamic JavaScript charts for real-time analytics visualization.

Master Thesis, Software Analytics Platform   Dec 2024 – June 2025
Team MecoIS, Erlangen, Germany

- Engineered a Python-based modular platform for ingesting and analyzing GitHub and Jira data to derive actionable engineering metrics.
- Built a domain-specific query engine enabling users to run simplified analytics queries via a custom Python DSL.
- Designed data modeling and preprocessing pipelines to support efficient querying, reducing analysis latency by 40%.
- Proposed and validated novel developer productivity metrics based on Git and Jira activity signals.
- Developed a full-stack web dashboard using TypeScript and Flask, exposing REST APIs for interactive analytics and reporting.

Associate Data Engineer (Software Systems)   Jan 2021 – Aug 2022
ZS Associates, Gurugram, India

- Designed scalable data integration pipelines using AWS Glue, Redshift, and Python, managing 300+ heterogeneous data sources.
- Developed ETL systems automating ingestion of Excel and JSON datasets from S3, improving pipeline reliability and reducing manual ops.
- Refactored data workflows to increase performance of reporting systems by 35%, enabling near real-time analytics.
- Implemented automated data quality checks and validation workflows at every ingestion stage using Python-based frameworks.
- Built a high-throughput Kafka + Python system for streaming 20M+ events daily with 99.99% accuracy, supporting real-time insights on user interactions.

Skills

Programming Languages: Java, Python, JavaScript, SQL
Web Development: HTML5, CSS, RESTful APIs, Spring Boot, JSON
Data Analytics: Azure Data Explorer (ADX), KQL, Apache Kafka, MySQL, MongoDB, Redis
Process Optimization: CI/CD Pipelines, Azure DevOps, JMeter, SonarQube, A/B Testing Methodologies
Cloud & DevOps: Microsoft Azure, Docker, Kubernetes, Linux Scripting, Load Balancing
Collaboration Tools: Git, Agile Methodology, JIRA, Confluence