

MAHEK PATEL

IT SOFTWARE ENGINEER | DATA SCIENTIST | PYTHON & SQL EXPERT

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PROFESSIONAL PROFILE

Senior Software Engineer specializing in event-driven data platforms. I ingest data from enterprise applications, normalize and publish to Kafka (topic design, keys/partitioning, Avro/Schema Registry), then expose secure REST APIs for real-time consumption. 6+ years across software/data engineering, including CATSWeb (ASSURX) support with T-SQL/SSMS. Hands-on with Java, Python, AWS, SQL, and CI/CD; I ship production-grade services with full-stack observability, optimized for reliability, throughput, and p99 latency.

CORE SKILLS

- Languages: JavaScript, Python, SQL, KSQL, PowerShell
- Back end & APIs: Microservices, REST, performance tuning, secure auth & input validation
- Streaming & Data: Real-time/event pipelines, ETL/ELT, analytics & reporting
- Cloud: AWS (RDS, S3), Terraform, GitHub Actions
- Data Stores: PostgreSQL/MySQL/SQL Server, NoSQL
- Practices: Agile/Scrum, TDD/XP, code reviews, monitoring/alerting, incident response

WORK EXPERIENCE

DUKE ENERGY INC., CHARLOTTE, NC, JUNE 2022 TO PRESENT

IT Software Engineer

- Own the data integration path end-to-end: ingest records from source applications, validate/normalize, and publish to Apache Kafka (topic design, keys/partitioning, retention).
- Build and operate producers/consumers in Java/Python; implement idempotency, retries, backpressure, and dead-letter handling to protect downstream systems.
- Perform targeted stream processing (routing/enrichment/aggregation) to drive derived topics used by analytics and operational services.
- Expose secure REST APIs that sit on top of Kafka-backed data (filtering, pagination, query semantics) so internal users and partner apps can connect and consume reliably.
- Define and enforce schemas (Avro) with a schema registry and CI checks to maintain compatibility across services.
- Observability & ops: monitor consumer lag/offsets, throughput, and p99 latency; alert on anomalies; handle scaling, rebalancing, and rolling upgrades.
- CI/CD & IaC: automated build/test/deploy for services and topics; environment provisioning and config promotion with version control.

DUKE ENERGY INC., CHARLOTTE, NC, JAN 2020 TO JUNE 2022

IT BUSINESS APPLICATION ANALYST

- Product support & build partner: Supported the design, development, and operations of the CATSWeb compliance application, translating business requirements into data models, views, and exports; partnered with devs/SMEs through spec, UAT, and release.
- T-SQL engineering in SSMS: Wrote/maintained stored procedures, views, and tab-delimited export jobs; implemented robust tab-character sanitization and validation to preserve exact business logic for downstream systems.
- Data quality & governance: Identified input/mapping errors that skewed metrics; added field validations, lookup/mapping standards, and reconciliation checks to harden data integrity across highly de-normalized tables and cross-table views.
- Automation & access management: Built PowerShell + Selenium automation to streamline CATSWeb user provisioning and repetitive admin tasks; documented runbooks for repeatable operations.
- Reporting & analytics: Developed Power BI dashboards and ad-hoc SQL extracts surfacing compliance KPIs and anomaly flags for leadership; integrated external data (e.g., SERC site scraping via PowerShell) into analytics pipelines.
- Operations excellence: Managed incident/defect triage in Jira/ServiceNow, root-caused data issues, and drove fixes that stabilized nightly loads and executive reporting SLAs.

EDUCATION

MASTER'S DEGREE IN DATA SCIENCE, IN PROGRESS

University of North Carolina at Chapel Hill, Chapel Hill, NC

Anticipated Graduation Date: May 2026

MASTER'S DEGREE IN DATA SCIENCE AND BUSINESS ANALYTICS, 2021

University of North Carolina at Charlotte, Charlotte, NC

GPA: 3.9

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION AND MANAGEMENT INFORMATION SYSTEM, 2017

University of North Carolina at Charlotte-Charlotte, NC