

# 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

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## 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.

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## 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*