Krutik Rajesh Panchal

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EDUCATION

Rochester Institute of Technology **Aug 2023 - May 2025**
Master of Science, Data Science
- **Coursework:** Software Engineering for Data Science, Database Management and Analytics, Machine Learning

University of Mumbai **Aug 2016 - May 2020**
Bachelor of Engineering, Information Technology
- **Coursework:** Data Structures and Algorithms, Software Architecture with Python, Cloud Computing, Big Data Analytics, Data Mining

SKILLS

- **Programming**: Python, PySpark, scikit-learn, pandas, NumPy, Django, boto3, Java, SQL, PowerShell
- **Software Development & APIs**: REST, GraphQL, OOP, Git, GitHub/GitLab CI/CD, Docker, Linux, Unit Testing, PyTest
- **Cloud & DevOps**: AWS, S3, Redshift, Glue, RDS, Lambda, EC2, IAM, Azure
- **Data Systems**: MySQL, PostgreSQL, MongoDB, Neo4j, Redis, Amazon Redshift
- **Big Data & ETL**: Apache Spark, Kafka, Airflow, dbt, Databricks
- **Visualization**: Power BI, Tableau, QlikSense, matplotlib, seaborn

WORK EXPERIENCE

BulkMagic LLC **Sep 2025 - Present**
Software Engineer *Rochester, NY*
- Designed and developed scalable Django-based web applications with GraphQL APIs, implementing secure authentication and boosting API performance by 30% through optimized query handling.
- Built and deployed an AI-driven product image and description generation feature for local businesses, reducing onboarding time by 40% and increasing customer adoption in pilot markets.
- Collaborated with front-end, product, and UX teams to deliver seamless user experiences while writing clean, testable Python code, enforcing code reviews, and managing AWS (EC2, Lambda, RDS, S3) deployments.

Rochester Institute of Technology **Jan 2025 - May 2025**
Graduate Teaching Assistant (Software Engineering for Data Science) *Rochester, NY*
- Mentored 33 students in building data-intensive applications, leveraging distributed frameworks like Apache Spark and Kafka to design scalable batch and stream processing systems.
- Guided project teams in applying Python, SQL, and MongoDB to implement end-to-end workflows, improving execution efficiency by 30% through modular and reliable software practices.
- Automated builds and deployments with GitLab CI/CD and Apache Airflow, reducing release cycles by 25% while instilling standards for testing, debugging, and code quality.

Larsen and Tourbo Infotech **Aug 2020 - Jul 2023**
Data Engineer *Mumbai, India*
- Architected AWS-based data platforms (S3, Redshift, Glue, RDS, Lambda, EC2), integrating 7+ TB from ERP, CRM, and third-party systems into unified data warehouse powering enterprise-wide analytics.
- Built and automated ETL pipelines with Python and AWS services, improving processing speed by 36% and eliminating 40% of manual effort through validation and monitoring workflows.
- Delivered real-time dashboards and alerting systems with Tableau and Power BI, reducing reporting latency from 2 hours to 1 minute and enabling faster, data-driven decisions.

PROJECT

Tick Sync: Real-time Stock Stream Processing *Link*
- Engineered a cloud-native streaming system with Kafka, Python consumers/producers, and AWS (S3, Glue, Athena) to handle 1M+ daily stock trade events, cutting query latency by 45% and enabling real-time insights.

Talk with PDFs: RAG-based Document Intelligence *Link*
- Developed a retrieval-augmented generation platform combining local LLMs and API-based models with LangChain, ChromaDB, enabling interactive PDF Q&A that improved response speed by 40% and expanded accessibility for large documents.

Stock Sage: Predictive Inventory Management
- Built a data-intensive backend integrating MySQL, MongoDB Atlas, Airflow, and Docker, embedding time-series forecasting APIs that improved inventory demand prediction accuracy by 30%, supporting smarter business decisions.

PUBLICATIONS

- Assessing Effective Token Length in Multimodal Models (ACM SIGIR 2025).Explored optimization of token pooling and chunking strategies in vision-language models (CLIP, BLIP-2) to balance efficiency vs. accuracy. *Paper* | *GitHub*