

SHIVANSH SINGH

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SUMMARY OF EXPERIENCE AND ACHIEVEMENTS

- **Senior Technical Expertise:** Over **10 years of experience** specializing in building scalable backend systems, high-performance data platforms, and integrated machine learning solutions.
- **Cloud Infrastructure Leadership:** Led high-stakes migrations, including upgrading Aurora PostgreSQL from Serverless v1 to v2, which **directly reduced daily RDS costs by 50% (\$60,000 annual savings)**.
- **Operational Excellence:** Modernized core orchestration by leading the **Apache Airflow upgrade (v2.0.2 to v2.8.1)** and developed custom local debugging environments to accelerate developer velocity.
- **Data Integrity & Scale:** Expert at remediating large-scale data discrepancies; resolved case-sensitivity issues to **restore 3,012 missing property listings** and managed reprocessing for **over 1 million records**.
- **Machine Learning ROI:** Architected a RESTful Document Classification Service achieving a **97% classification rate and 96% accuracy**, while automating data cleaning to **save 160 manual labor hours** per cycle.

EXPERIENCE

ROCKET INNOVATION STUDIOS ULC | Greater Toronto Area, ON

Data Engineer | Nov 2024 – Jul 2025

- **Project Management:** Directed the end-to-end execution of the Deeds and Assessments project, integrating complex property sale history data into the search store.
- **Cloud Automation:** Researched and deployed an automated data ingestion framework using **AWS Transfer Family (SFTP)**, eliminating manual file-handling bottlenecks.
- **Data Integrity Remediation:** Identified and resolved a critical data-matching discrepancy in street name casing, **remediating over 3,012 missing property listings**.
- **System Migration:** Orchestrated the **GitHub to GitHub EMU migration**, authoring critical documentation to maintain zero downtime for the organization.

ROCKET HOMES | Detroit, MI & Remote

Data Engineer / Software Engineer | Nov 2018 – Nov 2024

- **Cost Optimization:** Spearheaded the migration of Aurora PostgreSQL from Serverless v1 to v2, resulting in a **50% reduction in daily RDS costs and annual savings of \$60,000**.
- **Infrastructure Modernization:** Led the upgrade of **Apache Airflow from v2.0.2 to v2.8.1** and developed a local debugging environment to significantly increase developer velocity.
- **Operational Excellence:** Automated the legacy school ratings update process, transforming a multi-day manual task into a reliable **24-hour turnaround**.
- **Data Reliability:** Developed a “**Dry-Run**” capability for the conformed reprocessing job, enabling pre-execution validation for high-volume data updates of **1M+ records**.
- **Performance Engineering:** Engineered a custom **Image Trimmer Lambda (Python/PIL)** to replace legacy solutions, resulting in a more resilient and cost-effective pipeline.
- **Infrastructure as Code:** Led regional restructuring of Terraform configurations, improving long-term maintainability and multi-region scalability.

AMROCK (formerly Title Source) | Detroit, MI

Software Engineer - Machine Learning | Feb 2016 – Nov 2018

- **ML System Architecture:** Developed a RESTful Document Classification Service using Naive Bayes, achieving a **97% classification rate and 96% accuracy**.

- **Process Automation:** Built a text clustering utility (K-Means) to automate data cleaning, **saving 160 hours of manual labor** per project cycle.
- **Production Engineering:** Pioneered the first model-to-production pipeline by architecting Flask microservices, enabling the transition of data models from development to live environments for the first time in company history.

CHEMICAL SEMANTICS INC. | Gainesville, FL

Software Developer Intern | Sep 2015 – Dec 2015

- **Performance Tuning:** Analyzed solutions to remove redundancies and optimized performance of graphs, reducing resource loading times by **50%**.

EDUCATION

- **Master of Science in Computer Science** - University of Florida, Gainesville, FL [GPA: 3.8/4.0]
- **Bachelor of Technology in Computer Science** - JIIT, Noida, India [GPA: 8.5/10.0]

TECHNICAL SKILLS

- **Languages:** Python, Java, SQL, JavaScript, HTML/CSS
- **Data & Orchestration:** Apache Airflow, PostgreSQL, Aurora Serverless, Kafka, ETL/ELT Pipelines
- **Cloud & DevOps:** AWS Tools(Lambda, RDS, EMR, S3, DynamoDB, Athena, Kinesis), Terraform, Docker, CI/CD, GitHub Actions
- **Tools & Frameworks:** Git, JIRA, Flask, NLTK, Pytest, Linux/Shell Scripting

HACKATHONS

- **AI Real Estate Report:** Architected a **tiered multi-agent AI system** integrating data from various official sources to generate comprehensive property insights for new home buyers.
- **Listing Narrative:** Engineered a multimodal utility using Computer Vision and TTS to transform static property images and descriptions into automated, immersive audio stories for real estate buyers.
- **Bluetooth NFC Location Tags:** Developed a self-guided tour system using Bluetooth and NFC tags, enabling automated, real-time historical data delivery to visitors' mobile devices, enabling the replacement of manual tours.

AWARDS AND LEADERSHIP

- **Subject Matter Expert (Postgres):** Recognized as a technical lead for troubleshooting and providing guidance in relational database optimization.
- **Engineering Culture Lead:** Organized team-building initiatives and led quarterly sync-ups to facilitate cross-teams knowledge sharing.
- **NASA AMES Space Settlement Design 2008:** 3rd Place Global Ranking.