

Shivansh Singh

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PROFESSIONAL SUMMARY

Senior-level Software and Data Engineer with **10+ years of experience** architecting scalable backend systems, cloud-native data platforms, and machine learning solutions. Proven track record of leading high-stakes infrastructure migrations and optimizing cloud environments to achieve **50% cost reductions**. Expert in delivering measurable business value through advanced automation, technical leadership, and robust Infrastructure as Code (Terraform).

TECHNICAL SKILLS

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

PROFESSIONAL EXPERIENCE

ROCKET INNOVATION STUDIOS ULC | Greater Toronto Area, ON (Remote)

Data Engineer | *November 2024 – July 2025*

- **Project Leadership:** Led the end-to-end delivery of the Deeds and Assessments project, managing complex data requirements to integrate property sale history into the search platform.

- **Cloud Automation:** Researched and implemented an automated ingestion strategy using **AWS Transfer Family (SFTP)**, replacing manual processes with a scalable serverless workflow.
- **System Migration:** Orchestrated the technical transition for a **GitHub to GitHub EMU migration**, authoring critical documentation to maintain zero downtime for the engineering organization.
- **Data Integrity:** Resolved a critical data-matching discrepancy in street name casing, remediating over **3,012 missing property listings**.

ROCKET HOMES | Detroit, MI & Remote

Data Engineer / Software Engineer | *November 2018 – November 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 legacy school ratings update processes, reducing a multi-day manual effort to 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.
- **Performance Engineering:** Built a custom **Image Trimmer Lambda (Python/PIL)** to replace legacy solutions, creating a more resilient and cost-effective pipeline.
- **Framework Extension:** Enhanced the Scala mapping and normalization framework to support **array-of-structs**, enabling critical listing and media coupling updates.

AMROCK (formerly Title Source) | Detroit, MI

Software Engineer - Machine Learning | *February 2016 – November 2018*

- **Machine Learning ROI:** Developed a RESTful Document Classification Service using **Logistic Regression**, achieving a **97% classification rate** and 96% accuracy.
- **Process Automation:** Built a text clustering utility (K-Means) to automate data cleaning for training models, saving **160 hours of manual labor** per cycle.

CHEMICAL SEMANTICS INC. | Gainesville, FL

Software Developer Intern | *September 2015 – December 2015*

- **Graph Optimization:** Analyzed and optimized graph resource loading, reducing processing time by **50%**.

PROJECTS & HACKATHONS

- **AI Real Estate Report (May 2025 Hackathon):** Architected a **tiered multi-agent AI system** pulling data from various official sources to generate comprehensive property reports including historical permits, schools, crime, and natural disaster susceptibility.
- **Listing Narrative AI (March 2025 Hackathon):** Implemented **Logistic Regression and SVM models** to automate listing content; established team best practices for model testing.

EDUCATION

- **Master of Science in Computer Science** | University of Florida, Gainesville, FL
- **Bachelor of Technology in Computer Science** | IIIT, Noida, India

AWARDS & LEADERSHIP

- **Engineering Culture Lead:** Lead person for organizing team-building initiatives and identifying opportunities for team growth.
- **NASA AMES Space Settlement Design:** 3rd Place Global Ranking.
- **Why Wait 2 Challenge:** 1st Place Winner.
- **Knowledge Asset:** Established and led weekly technical sync-ups to facilitate knowledge sharing on complex design decisions.