SHIVANSH SINGH

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PROFESSIONAL SUMMARY

Results-driven Data / Software Engineer with 10+ years of experience architecting high-performance data platforms, cloud infrastructure, and backend systems on AWS. Proven track record delivering $360,000+ in annual cost savings, reducing pipeline latency by 83%, and leading enterprise-scale migrations (CloudFormation to Terraform, Aurora Serverless v1 to v2). Subject-matter expert in PostgreSQL and Terraform migrations; adept at cross-functional stakeholder management and mentoring engineering teams in Agile environments.

CORE COMPETENCIES

- **Cloud & Infrastructure:** AWS (Lambda, RDS/Aurora, EMR, S3, DynamoDB, Athena, Kinesis, SQS, SNS) • Terraform • Docker • CI/CD • GitHub Actions
- **Data Engineering:** Apache Kafka • Apache Airflow • Apache Spark • Elasticsearch • ETL/ELT Pipelines • Data Governance • Data Quality
- **Languages & Frameworks:** Python • Java • SQL • JavaScript • Flask • NLTK • Pytest • Linux / Shell Scripting
- **Practices & Tools:** Distributed Systems • Agile / Scrum • IAM & Least Privilege • Microservices • JIRA • Git • Technical Mentorship

EXPERIENCE

ROCKET COMPANIES (Rocket Innovation Studio & Rocket Homes) | Detroit, MI & Toronto (Remote)

Data Engineer / Software Engineer | Nov 2018 - Jul 2025

Cloud Infrastructure & Cost Optimization

- **Cost Savings:** Orchestrated Aurora PostgreSQL migration to Serverless v2 and optimized AWS EMR clusters, delivering $360,000 in combined annual savings and a 50% reduction in daily RDS costs.
- **Infrastructure as Code:** Led full enterprise migration from CloudFormation to Terraform; redesigned regional configurations for multi-region scalability, maintainability, and Infrastructure and Security compliance.
- **Modernization & CI/CD Upgrades:** Directed Apache Airflow upgrade to v2.8.1 and built a local debugging environment, increasing developer velocity by 25% and reducing deployment times to under 10 minutes via GitHub Actions.
- **Zero-Downtime Migration:** Executed secure GitHub to GitHub EMU migration in collaboration with Infrastructure and Security teams, authoring enterprise-level documentation while maintaining 100% platform uptime.

Data Engineering & Platform Development

- **High-Performance ETL:** Architected Spark-based ETL/ELT pipelines that reduced data delivery latency by 83% (from 1 hour to under 10 minutes) while cutting ongoing maintenance overhead by 30%.
- **Scalable Data Platform:** Engineered robust data quality frameworks with advanced logging, alerting, and monitoring to support Rocket's national expansion across all 50 states.
- **End-to-End SDLC Leadership:** Directed the Deeds and Assessments project, integrating complex property sale history and resolving discrepancies to remediate 3,000+ missing listings.
- **Reliability Engineering:** Developed a 'Dry-Run' validation capability for high-volume reprocessing jobs, enabling risk-free execution across 1M+ record updates.
- **Process Automation:** Automated legacy school ratings update pipeline, reducing turnaround time by 67%.
- **Performance Engineering:** Engineered a custom Image Trimmer Lambda (Python/PIL) replacing a legacy solution, resulting in a more resilient and cost-effective image processing pipeline.

Technical Leadership & Mentorship

- **Subject Matter Expert:** Served as primary SME for PostgreSQL and Terraform migrations, providing definitive guidance on complex solution design and production root-cause analysis.
- **Mentorship:** Mentored junior engineers and new hires on Python and AWS data platforms; authored technical onboarding documentation that significantly reduced recurring support issues.
- **Stakeholder Management:** Facilitated strategic alignment between Product Owners, Data Analysts, Infrastructure and Security teams, and senior management across the full SDLC in an Agile/Scrum environment.

- **Engineering Culture Lead:** Organized team-building initiatives and led quarterly sync-ups to facilitate cross-teams knowledge sharing.

AMROCK (formerly Title Source) | Detroit, MI

Software Engineer - Machine Learning | Feb 2016 - Nov 2018

- **ML System Architecture:** Designed and deployed a RESTful Document Classification Service using Naive Bayes, achieving a 97% classification rate and 96% accuracy in production.
- **Process Automation:** Build a text clustering utility (K-Means) to automate data cleaning, saving 160+ hours of manual labor per project cycle.
- **Production Engineering:** Pioneered the company's first model-to-production pipeline by architecting Flask microservices, enabling deployment of ML models to live environments for the first time in company history.

CHEMICAL SEMANTICS INC. | Gainesville, FL

Software Developer Intern | Sep 2015 - Dec 2015

- **Performance Optimization:** Analyzed and refactored graph rendering solutions, eliminating redundancies and reducing resource loading times by 50%.

EDUCATION

- **Master of Science in Computer Science - 2015** - University of Florida, Gainesville, FL [GPA: 3.8/4.0]
- **Bachelor of Technology in Computer Science - 2014** - JIIT, Noida, India [GPA: 8.5/10.0]

PROJECTS & HACKATHONS

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