SHARVANI CHELUMALLA

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Computer Science graduate with **5+ years** of combined experience in Data Engineering, Software Engineering, Cloud Technology, and Machine Learning.

Experience

Yoonefi Technology Solutions LLC   **Sep. 2025 – Present**
Data & Application Migration Engineer   *Remote*
- Contributing to the development and migration efforts of the **stacX Platform**, a technology initiative being built to support **nonprofit organizations**.
- Designing and executing **ETL pipelines** using **AWS Glue, S3, and RDS** to support migration from **legacy relational systems** to modern **cloud data platforms**.
- Implementing **schema transformation** and **data integration strategies** to ensure **consistency**, **accuracy**, and **optimization** for cross-regional applications.

Resolution Life   **Aug. 2024 – May 2025**
Data Science Co-op   *Remote*
- Designed **technical architectures** and automated end-to-end **ETL pipelines** for **batch and real-time** use cases.
- Developed scalable **data ingestion workflows** that unified **structured and unstructured sources**, improving data availability for **analytics by 35%** and reducing manual intervention through **automated schema handling**.
- Implemented CI/CD pipelines with **AWS CodePipeline** and **GitHub Actions** to automate **deployment, testing, and monitoring** of data workflows, reducing release cycles by **25%**.
- Enhanced **data availability** and **processing efficiency by 30%** by implementing robust **quality checks** and creating optimized **Apache Iceberg tables**.

UGA School of Computing   **Aug. 2023 – May 2025**
Research Assistant   *Athens, Georgia*
- Designed a cost-efficient, fault-tolerant **hierarchical federated learning framework** using **transient virtual machines** and **asynchronous communication**, reducing **model convergence time by 20%** and **infrastructure costs by over 40%**.
- Achieved a **7x speedup** in communication by integrating an efficient **gRPC implementation**, accelerating **model training** and improving **system resource utilization**.

Cognizant Technology Solutions   **Dec. 2020 – July 2023**
Data Engineer - Associate   *Hyderabad, India*
- Built and maintained an **event-driven data lake ingestion framework** using **PySpark** and **AWS Glue**, with data stored in **S3** and cataloged via **Glue Data Catalog**, enabling downstream analytics and **metadata management**.
- Implemented fine-grained access control with **Lake Formation** and **IAM roles**, along with **data encryption** and **logging** to ensure compliance and secure data sharing across teams.
- Optimized **Redshift** tables via partitioning, compression, and DDL tuning, boosting query speed and cutting storage costs.
- Developed and monitored **ETL pipelines** leveraging **AWS services (Glue, S3, DynamoDB, Lambda, EMR, EC2, EKS, RDS, Step Functions, EventBridge, Redshift, Athena, SNS, SQS, CloudWatch)** and **Databricks**, enabling scalable **real-time and batch processing**.

Technical Skills

Languages: Python, C, HTML/CSS, JavaScript, Java, Rust
Tools: VS Code, IntelliJ, Eclipse, Jenkins, Jira, Confluence, CI/CD, Git, Cargo, Android Studio
Technologies/Frameworks: AWS, Azure, GCP, Kubernetes, Docker, Federated Learning, DevOps
Databases: MySQL, PostgreSQL, MongoDB, Amazon RDS
Data Warehousing / Big Data: Amazon Redshift, Snowflake, Hadoop, Hive, Apache Spark, PySpark, Kafka
Data Integration: gRPC, REST APIs, JSON/XML, API Gateway, Informatica, Serverless Functions, Microservices
Machine Learning & CV: Pandas, Numpy, PyTorch, TensorFlow, OpenCV, Scikit-learn, Diffusion Models, CNNs, NLP
Data Visualization: Power BI, Tableau, Matplotlib

Education

University of Georgia   **Aug. 2023 – May 2025**
Master of Science in Computer Science   *Athens, Georgia*

Certifications & Publications

AWS Certified Solutions Architect – Associate | *Link*   **Jan 2024**
Real-time Video Enhancement Using the Camera Response Model | *Link*   **May 2020**

Projects

SpotLight: Lightweight, Cost-efficient, Scalable FL framework | *AWS, Kubernetes, Celery, Redis*   **May 2025**
- Designed and implemented a hierarchical federated learning framework that improves scalability and cost-efficiency by leveraging transient virtual machines, asynchronous communication, and robust fault-tolerance with automated recovery from spot instance failures, ensuring faster convergence, data integrity, and reduced operational downtime.

RustFL: Secure and Asynchronous Federated Learning framework | *Pytorch, Machine Learning, Docker*   **Nov. 2024**
- RustFL is a secure federated learning framework built in Rust that enables asynchronous training of machine learning models while preserving client data privacy through Differential Privacy and Secure Multiparty Computation, ensuring end-to-end confidentiality, secure model update aggregation, and efficient decentralized collaboration.

Cloud Performance and Cost Analysis for Food Apps | *Node.js, Laravel8, Flutter3.7, Bootstrap5, Azure*   **Dec. 2023**
- Spearheaded **Android application development** and conducted a comprehensive **cloud cost and performance analysis** across **AWS** and **Azure**, building automated load testing scripts to evaluate scalability, resilience, and resource utilization.