

SHARVANI CHELUMALLA

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Computer Science graduate with **4+ years** of experience in Data Engineering, Software Engineering, Cloud Technology, and Machine Learning.

Education

University of Georgia

Master of Science in Computer Science

Aug. 2023 – May 2025

Athens, Georgia

Experience

Resolution Life

Data Science Co-op

Aug. 2024 – May. 2025

Remote

- Collaborated with Business Architects to design scalable technical architectures for strategic enterprise initiatives.
- Developed and implemented data ingestion frameworks for end-to-end ETL pipelines, enabling batch and real-time analytics using emerging technologies, with additional focus on data quality checks and Apache Iceberg table creation.

UGA School of Computing

Research Assistant

May 2024 – Apr. 2025

Athens, Georgia

- Developing a scalable hierarchical federated learning framework, optimizing cost efficiency and fault tolerance by utilizing transient virtual machines and implementing asynchronous communication, and robust failure recovery mechanisms.

Cognizant Technology Solutions

Data Engineer - Associate

Dec. 2020 – July 2023

Hyderabad, India

- Directed software design and development to meet client needs for functionality, system designs and performance.
- Orchestrated the ETL process using AWS services (Glue, S3, DynamoDB, Lambda, Step Functions, Event Bridge, Redshift, Athena), enabling seamless data integration and analysis, resulting in data-driven business insights and improved decision-making capabilities.

Technical Skills

Languages: Python, Java, C, HTML/CSS, JavaScript, Rust, PySpark

Tools: VS Code, IntelliJ, Eclipse, Jenkins, Jira, Confluence, CI/CD, Git, Cargo, Android Studio

Technologies/Frameworks: AWS, Azure, Kubernetes, Docker, Hadoop, Hive, Kafka, Federated Learning, DevOps

Databases: MySQL, PostgreSQL, MongoDB

Data Integration: gRPC, REST APIs, JSON/XML, API Gateway, Serverless Functions, Microservices

Machine Learning & CV: PyTorch, TensorFlow, OpenCV, Scikit-learn, Diffusion Models, CNNs, Datasets (MNIST, CIFAR10, CIFAR100, ImageNet)

Data Visualization: Power BI, Tableau, Matplotlib

Projects

SpotLight: Lightweight, Cost-efficient, Scalable FL framework | AWS, Kubernetes, Celery, Redis

May 2025

- Developed a novel scalable hierarchical federated learning framework that enhances scalability and cost efficiency by utilizing transient virtual machines, implementing robust fault tolerance mechanisms, and integrated asynchronous communication to improve model convergence and manage variability in device performance across distributed networks.
- Leveraged an alert mechanism for seamless recovery from spot instance failures, ensuring data integrity and minimal 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.

Movie Ticket Booking Website | React.js, PostgreSQL, Express.js

Apr. 2024

- Led the full stack development, demonstrating front-end design, database management skills and increased system robustness using Express.js in backend.

Cloud Performance and Cost Analysis for Food Apps | Node.js, Laravel8, Flutter3.7, Bootstrap5

Dec. 2023

- Spearheaded the front-end Android application development. Conducted a comprehensive cost analysis comparing Amazon web services and Microsoft Azure which aimed to determine the most cost-effective solution for hosting and managing.

Certifications

AWS certified Solution Architect – Associate | [Link](#)

Publications

Real Time Video Enhancement Using Camera Response Model | [*Link*](#)

May 2020

Honors/Involvement

- Elected as coordinator for The Institution of Electronics and Telecommunications Engineers (IETE) student organization.
- Received “Working as One” and “Seeking Data and Building Knowledge” awards in IT industry as recognition.
- Achieved Gold medal in memorizing entire Bhagavad-Gita (The Holy book of Hindus).