

SHARVANI CHELUMALLA

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🌐 [Portfolio](#)

Education

University of Georgia

Master of Science in Computer Science

Aug. 2023 – May 2025

Athens, Georgia

Experience

Resolution Life

Aug. 2024 – Present

Data Science Co-op

Remote

- Partnering with Business Analysts and Architects to develop technical architectures for strategic enterprise projects.
- Enabling big data and batch/real-time analytical solutions that leverage emerging.
- Developing and implementing data ingestion frameworks for end-to-end ETL pipelines.

UGA School of Computing

May 2024 – Present

Research Assistant

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

Dec. 2020 – July 2023

Data Engineer - Associate

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.

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, enabling asynchronous training of machine learning models while preserving client data privacy.
- By incorporating Differential Privacy and Secure Multiparty Computation, it ensures 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.

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, Kubernetes, Docker, Bigdata, Azure, GCP, Federated Learning, FastAPI, GRPC

DataBase: MySQL, PostgreSQL, MongoDB

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).