Shirlene Rose Bandela

(571)-442-3221
shirlenebandela@gmail.com   Falls Church, Virginia, U.S.A (Open to Relocate)   **LinkedIn:** Shirlene Rose

EDUCATION

Master of Engineering, CS - Data Analytics and Artificial Intelligence, Virginia Tech   **Aug 2023 - May 2025**
Relevant Coursework: Machine Learning, NLP, Introduction to Artificial Intelligence, Machine Learning with Big Data, Ethics
Bachelor of Technology, ECE, G. Narayanamma Institute of Technology and Science   **Aug 2018 - Jul 2022**
Memberships: Attendee, Grace Hopper Celebration (GHC)   **Nov 2025**

EXPERIENCE

Software/Data Engineer | JP Morgan Chase & Co. | Hyderabad, India   **May 2021 – Aug 2023**

- Led the migration of legacy ETL apps to **Java/Spring Batch**, implementing **restartable, chunk-oriented and tasklet-oriented** jobs with **JDBC** readers/writers, replacing brittle scripts so core **card fraud-risk** pipelines became more reliable, observable, and easier to operate.
- **Optimized Oracle & Teradata SQL** by refactoring multi-join queries, adding composite indexes, **parameterizing** JDBC calls, and **tuning** execution plans. This helped eliminate **six** full-table scans and shortened batch windows.
- Hardened pipelines with **retry/skip policies**, tuned **batch sizes** and commit intervals, defined clear transaction boundaries and **idempotent writes**, and added step listeners and also implemented **data-quality gates** (schema/null/regex) and **audit logging** for traceability.
- Reduced **cloud storage cost by 40%** across 30+ microservices via **AWS S3** lifecycle policies.
- Implemented and maintained **CI/CD pipelines** (**Maven**, **Jenkins**, **Spinnaker**); enforced comprehensive **unit and integration testing** and peer **code reviews**; collaborated with platform and data-science teams to advance the analytics data platform.

Research Assistant | Virginia Tech, Department of Computer Science | Virginia, USA   **Jun 2025 – Present**

- Built a modular **Python + LLM** pipeline for multi-label trigger-warning classification of Reddit posts, curated multiple prompt templates for **GPT and LLaMA**, a **dynamic k-shot** builder that incorporated cosine-similarity over Sentence-Transformers embeddings to select similar examples for learning, and caching/batching for efficient inference using GPT and LLaMA.
- Added an **agentic validation** loop (perplexity checks + rule-based triage) with per-label metrics and confusion reports; operationalized on **AWS** (**EC2**/S3) with config-driven runs and a CLI so collaborators can **reuse components** for data prep, evaluation, and batch scoring at scale.

Machine Learning Research Intern | IIT Madras Research Park — Virginia Tech India | Chennai, India   **May 2024 – Jul 2024**

- Engineered an end-to-end **Python** pipeline (librosa, pandas, scikit-learn/TensorFlow) for lung-sound analytics using denoising and **time–frequency** features (MFCC, Mel-spectrograms) with reproducible configs; packaged reusable featurizers/evaluators and a batch-scoring CLI with documented data contracts.
- Trained and evaluated supervised models with stratified cross-validation and baseline comparisons and improved diagnostic accuracy by **25%** and reduced assessment time by **15 min**.

PROJECTS

Boeing Airlines - Frequent Flyer Loyalty Program Fraud Detection

- Built a reusable ingestion pipeline (**Kafka → Glue → S3 → Redshift**) for **300K+ transactions**/day; added schema validation, idempotent upserts, metrics/alerts, and retry patterns; integrated **SageMaker** scoring and materialized results to Redshift for dashboards, improving detection by **18%**.

Covid-19 Detection using Chest X-Ray and Convolutional Neural Network

- Built a reproducible **TensorFlow/Keras** pipeline for chest-X-ray COVID classification:data cleaning/augmentation, leakage checks, and transfer learning (**ResNet-50**); achieved **AUROC: 0.97, F1: 0.92** on a held-out set and packaged batch inference as a CLI/REST tool.

SKILLS

Languages	Java, Python, SQL
Back-End and APIs	Spring Batch, Spring Boot, REST, JDBC
Data Engineering	ETL (batch/stream), Kafka, Parquet, modeling and warehousing, Data Quality and governance (schemas, validation, audits)
Python Data/ML	pandas, pyarrow, fastparquet, PySpark, scikit-learn, NumPy
Cloud	AWS: S3, Lambda, Glue, Redshift, Athena, SageMaker
Build and CI/CD	Maven/Gradle, Git, Jenkins, Docker
Databases	Oracle, Teradata, Redshift
Front-End	React (HTML5, CSS3, Redux Toolkit)

CERTIFICATIONS

AWS Certified Cloud Practitioner (CLF-C02)   Jul 2025

PUBLICATIONS

Comparison of COVID-19 Diagnosis by CNN and ResNet Using Chest X-Ray, IEEE ICSCNA — November 2023