Indumathi Thamizharasan

New York | +1 (716) 256-7808 | indhuswa@gmail.com

Summary

Software Engineer with experience building scalable data pipelines, cloud-native services, and automation workflows using Python, Java, SQL, and GCP. Strong foundation in data structures, algorithms, debugging, and distributed systems with a track record of delivering reliable, production-ready solutions.

Education

University at Buffalo, SUNY 2024 – Present
M.S. in Computer Science Engineering – AI/ML Track GPA: 3.5/4.0

Sathyabama Institute of Science and Technology, Chennai 2018 – 2022
B.E. in Computer Science GPA: 9.13/10

Technical Skills

Languages:	Python, Java, C, C++, SQL, Bash
Backend & Systems:	Distributed ETL, CI/CD, Debugging
Cloud:	GCP (BigQuery, Cloud Storage), basic AWS (S3)
Tools:	Git, Linux, Automic Scheduler, Power BI, VS Code
Concepts:	Data Structures, Algorithms, OOP
ML :	PyTorch, Scikit-learn, OpenCV (for projects)

Professional Experience

Accenture | Data Engineering Analyst **Mar 2024–Aug 2024**

- Developed scalable Python/SQL data pipelines on BigQuery, reducing latency by 35% and improving system reliability.
- Automated ingestion workflows using Automic Scheduler and CI/CD, decreasing manual operations by 40%.
- Debugged and resolved production issues using GCP Logging, exception tracing, and Python-based diagnostics.

Accenture | Data Engineering Associate **Aug 2022–Mar 2024**

- Designed and maintained **SQL/BigQuery pipelines** supporting high-volume analytical workloads with focus on performance and code reusability.
- Implemented **incremental processing**, schema evolution, and automated validation checks to ensure reliability in distributed systems.
- Built backend logic for metrics and reporting layers consumed by dashboards and APIs.
- Followed software engineering best practices including **Git branching, peer code reviews, Agile sprints,** and CI/CD workflows.

Academic Projects

AI-Powered Elder Care Monitoring System **Feb 2025–May 2025**

- Developed a modular Python application for real-time activity monitoring using streamed video frames and backend processing pipelines.
- Engineered an optimized inference system using **ResNet18 + LSTM**, improving runtime efficiency with batching, ONNX export, and model-level optimizations.
- Built preprocessing utilities for frame extraction, normalization, and augmentation; integrated pose estimation using **BlazePose**.
- Implemented a production-like alerting workflow using **OpenCV** for detection and **SMTP-based automated notifications**.

Sentiment Classification System **Feb 2025**

- Implemented a Python-based text processing and classification pipeline for 14.6K airline tweets.
- Utilized tokenization, cleaning utilities, and model-serving scripts to improve inference quality and maintain reproducible workflows.
- Designed visual debugging tools using Matplotlib to understand model behavior and error patterns.

Lung Cancer Survival Prediction System **Mar 2021–Mar 2022**

- Built multiple classification models and evaluated performance using structured experimentation pipelines.
- Automated preprocessing steps including correlation checks, class balancing, and validation splits to ensure model reliability.