

# Indumathi Thamizharasan

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## SUMMARY

Software Engineer and MS graduate in Computer Science and Engineering (AI/ML) from the University at Buffalo with 2+ years of experience in data engineering, backend systems, and applied machine learning. Experienced in building scalable ETL pipelines, cloud-native data platforms, and AI-driven systems using Python and SQL. Proven ability to deliver end-to-end solutions and collaborate effectively across cross-functional teams.

## EDUCATION

### University at Buffalo

*Master of Science in Computer Science and Engineering(AI/ML)*

Buffalo, New York

Aug. 2024 – Dec. 2025

### Sathyabama Institute of Science and Technology

*Bachelor of Engineering in Computer Science*

Chennai, India

Aug. 2018 – Sep 2022

## EXPERIENCE

### Accenture

Mar 2024 – Aug 2024

*Chennai, India*

#### *Data Engineering Analyst*

- Designed and optimized **BigQuery stored procedures and complex SQL queries** to support analytical workloads and improve performance.
- Automated and monitored **Talend ETL pipelines** using **Automic Scheduler**, improving reliability and reducing manual effort.
- Performed **data validation, quality checks, and production issue troubleshooting** to ensure accuracy of downstream analytics.

### Accenture

Aug 2022 – Feb 2024

*Bengaluru, India*

#### *Data Engineering Associate*

- Built and supported **data ingestion pipelines on Google Cloud Platform**, loading enterprise data into **BigQuery**.
- Developed **Python preprocessing scripts** to transform non-CSV source files into BigQuery-compatible formats.
- Performed SQL development and validation using **DBeaver** and maintained data ingestion documentation.

## PROJECTS

### AI-Powered Elder Care Monitoring System

Jan 2024 – May 2024

- **Tech:** Python, PyTorch, OpenCV, Pose Estimation, ResNet18, LSTM.
- Built an end-to-end computer vision and deep learning pipeline for real-time activity recognition and fall detection.
- Trained a ResNet18 + LSTM temporal model and evaluated performance using precision, recall, and F1-score.

### Student Budget & Expense Management System

Jan 2024 – May 2024

- **Tech:** SQL, Relational Database Design, BCNF, Stored Procedures.
- Designed a normalized relational schema to manage student budgets, expenses, and savings.
- Implemented stored procedures and complex SQL queries for automated financial reporting and spending analysis.

### LLM-Based Document Summarization System

Feb 2024

- **Tech:** Python, HuggingFace, Transformers, BART, NLP.
- Developed a modular LLM-based abstractive summarization pipeline for long-form documents.
- Fine-tuned and evaluated models using an iterative workflow with ROUGE metrics and qualitative error analysis.

## TECHNICAL SKILLS

**Programming & Scripting:** Python, SQL, JavaScript, Java, C/C++

**Data Engineering & Databases:** Google BigQuery, MySQL, PostgreSQL, ETL Pipelines, Data Ingestion, Stored Procedures, Data Validation, Data Quality Checks

**AI & Machine Learning:** PyTorch, Computer Vision, NLP, LSTM, ResNet, BART, RAG Fundamentals, Tensorflow

**Frontend & Backend Technologies:** HTML5, CSS3, Vue.js (basic), RESTful APIs, React Native

**Cloud, DevOps & Version Control:** Google Cloud Platform (GCS), AWS (basic exposure), Git, CI/CD Pipelines

**Tools & Platforms:** DBeaver, Postman, Automic Scheduler, Jupyter Notebook, Power BI

**Certifications:** Google Cloud Digital Leader