

SJ Arulprasaad

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Professional Profile

AI/ML Engineer specializing in **software automation**, **workflow optimization**, and **predictive modeling**. Experienced in building and deploying scalable **data pipelines**, automated **ETL workflows**, and anomaly detection systems. Strong Python expertise with Airflow, Docker, and FastAPI. Knowledgeable in machine learning, deep learning, and analytics applied to semiconductor process automation.

Work Experience

Quantum-Inspired Anomaly Detection Internship

Python, scikit-learn, NumPy

Summer Research Internship — VITC University

- Developed end-to-end anomaly detection pipelines for large-scale streaming datasets (30M+ rows), leveraging quantum-inspired feature embeddings and fused similarity scoring to improve robustness on noisy industrial data.
- Automated real-time anomaly monitoring using sliding-window processing, enabling early alerts and reducing manual intervention in data validation workflows.

Key Projects

Automated Data Pipeline Workflows

Python, Airflow, Docker, FastAPI

Software Automation & Data Engineering

- Built automated ETL pipelines with integrated monitoring and error handling, reducing manual effort by 70%.

Predictive Maintenance Simulation

Python, scikit-learn, FastAPI

Industrial Automation

- Designed predictive models for equipment failure forecasting and deployed via FastAPI for seamless integration into production dashboards.

Interactive Data Dashboard

Tableau, Pandas, SQL

Analytics & Reporting Automation

- Automated KPI dashboards with scheduled data refresh, reducing reporting time by 60%.

Technical Expertise

Languages: Python, SQL, R, JavaScript, C++, Java

Automation & Workflow: Airflow, Docker, FastAPI, MLflow, ETL pipelines, real-time monitoring, anomaly detection

Machine Learning / DL: PyTorch, TensorFlow, scikit-learn, XGBoost

Data / Analytics: Pandas, NumPy, Tableau, Power BI, PostgreSQL, MySQL

Education

B.Tech in Computer Science and Engineering (AI/ML) — VIT Chennai

Aug 2023 – May 2027

CGPA: 9.43 / 10

Maharishi Vidya Mandir Senior Secondary School (Class 12)

May 2023

Score: 94.5%

Honors & Awards

- Secured **Rank 1** in AI & ML specialization (CSE) for Semester 1 at VIT Chennai
- Ranked among top 15 teams in Data Mission Impossible Workshop hosted on Kaggle