

JAYANDHAN SENTHIL MURUGAN

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EDUCATION

Master of Applied Science, Data Science | GPA 3.81

May 2026

Illinois Institute of Technology

Chicago, IL

Coursework: Statistical Learning, Regression, Monte Carlo Methods of Finance, Big Data Technologies, Advanced Database Organization, Data Preparation and Analysis, Machine Learning.

TECHNICAL SKILLS AND CERTIFICATION

Business Intelligence: Power BI (DAX, Power Query, semantic models), Grafana (Athena plugin, Docker deployment), SQL window functions, Excel dashboards and pivot analysis, Amazon QuickSight, Matplotlib, Seaborn

Programming & Analytics Tools: Python, SQL, R, C++, HTML, Jupyter Notebook, Alteryx, QGIS

Cloud and Data Engineering: AWS S3, Glue, Athena, Lake Formation, IAM; serverless data lake architecture, Apache Parquet, Docker, Databricks, medallion architecture (bronze / silver / gold), Apache Spark and PySpark, ETL pipelines, data cataloging

Databases: MySQL, SQLite, ChromaDB, SLATE CRM

PROFESSIONAL EXPERIENCE

Data Scientist • American Labelmark Company, Inc. | Chicago, IL

January 2025 – May 2026

- Engineered the full **data science lifecycle** in one modular pipeline: automated data validation, two-pass feature selection, lag-correlation filtering, feature scaling, sequence generation, and model artifact versioning.
- Built a forecasting platform that generates 8 parallel forecasts over a 22-month horizon. Used **LSTM networks** with a lookback window tuned per target. Used **Alteryx** to compare results across various forecasting models and support model selection before concluding with LSTM. Validated forecast accuracy through rolling-window backtesting across 37 folds. Reported **MAE**, **MAPE**, and **RMSE** for every target.
- Deployed the platform in **Streamlit** so non-technical staff could run live forecasts and trigger retraining without help.

Data Analyst • Illinois Institute of Technology, Graduate Admissions | Chicago, IL

August 2025 – May 2026

- Pulled applicant and engagement records from Slate CRM, then reconciled them against event attendance data using VLOOKUP and pivot table analysis.
- Managed the graduate admissions funnel dataset across four admission cycles, tracking each applicant from application start through submission, decision, deposit payment, and enrollment.
- Built Power BI dashboards with DAX measures reporting yield and stage conversion by program. Flagged programs converting below the cohort average and recommended outreach at the stage where the drop occurred.

Teaching Assistant, Database Organization • Illinois Institute of Technology | Chicago, IL

August 2025 – May 2026

- Taught relational database design, normalization, ER modeling, and SQL query optimization through labs and assignments.

Data Analyst, Performance Reporting

June 2019 – August 2023

SMT Pvt Ltd

India

- Standardized production KPIs across departments by building a centralized **Power BI semantic model**. Ran root cause analysis on the reporting discrepancy, then replaced with one calculation standard. This gave executives a single source of truth.
- Automated reporting workflows in Excel and Power BI. Manual reporting dropped 80 percent and decision-making efficiency improved 60 percent. Centralized inventory model joining procurement, stock, and consumption data. Mismatches fell 15 percent and supply chain visibility improved.
- Tracked KPIs and ran data audits for a 70-plus member operation to support management decisions. Trained 10-plus supervisors on the reporting tools to raise digital adoption.

TECHNICAL PROJECTS

J1939 Fleet Telemetry Pipeline and Predictive Maintenance Digital Twin

June 2026

Python, AWS (S3, Glue, Athena, IAM), Grafana, Docker, Apache Parquet, MDF4, SAE J1939, CANedge

- Built an end-to-end telemetry data pipeline that decoded 145K+ raw CAN bus messages per file into structured Apache Parquet datasets stored in Amazon S3. Designed a serverless AWS analytics solution using Glue Catalog and Athena to query large time-series datasets with SQL, eliminating the need for a managed database and improving data accessibility.
- Developed Grafana dashboards and automated analytics for engine and vehicle performance, using SQL window functions to identify anomalies and support predictive maintenance through cost-based alert modeling.

Competitor Intelligence and Topic Recommendation Platform

Feb 2026 – May 2026

Department of Growth

Chicago, IL

- Built an end-to-end competitor intelligence pipeline that scrapes multi-source RSS and web content, deduplicates via content hashing, persists articles in SQLite, and generates structured LLM briefings; delivered an automated weekly HTML digest over SMTP with checkpointed, net-new-only delivery and dry-run support for safe testing.
- Developed a retrieval-augmented generation (RAG) stack using semantic chunking, SentenceTransformer embeddings, and ChromaDB, plus an interactive Streamlit app for evidence-backed Q&A, live competitor reports, and article curation with configurable LLM backends (e.g. Ollama, Anthropic Claude, Google Gemini).

Scarlet Studio: GenAI Course Builder

Oct 2025 – Jan 2026

- Agent orchestration (LangChain/LangGraph): built a multi-agent “Course Builder” that converts instructor learning objectives and learner personas into complete syllabi, lesson plans, assessments, and retrieval packs (RAG over PDFs/screenshots via OmniParser v2; Visual-LLMs for tables and diagrams).
- Built robust backend APIs with FastAPI/Pydantic for multi-agent stages, enforcing typed contracts and structured LLM outputs with JSON fallback parsing, plus Supabase persistence for attempt-level telemetry.

FINANCIAL OVERSIGHT AND LEADERSHIP

Finance Board Advisor, Student Government Association • Illinois Institute of Technology

July 2025 – May 2026

- Advised the Finance Board on allocation of a 700,000 dollar budget. Reviewed funding proposals for compliance and reported on spend.

President, Product Management Club | Treasurer, IEEE and ISA • Illinois Institute of Technology

Aug 2025 – May 2026

- Organized cross-disciplinary technical events and managed club finances, including budgeting and fund allocation, ensuring transparent use of resources.

Data Operations and Agri-Wing Lead (pro bono) • Makilam Farmer Producer Company Ltd • India

Oct 2022 – Aug 2023

- Built a drone-image classification pipeline to flag diseased trees. Accuracy rose from 73 to 86 percent after color standardization.