

SARRON A. TADESSE

Data Scientist | AI Model Evaluation | Software & Analytics Engineering

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SUMMARY

Data scientist and analytics engineer building predictive models, AI retrieval systems, and decision tools from complex operational data. Strong in Python, SQL, machine learning, NLP, forecasting, and Power BI, with experience translating messy, high-volume data into validated insights and deployable tools.

TECHNICAL SKILLS

Programming & Analytics: Python, SQL, PostgreSQL, R, JavaScript, Pandas, NumPy, Excel, Power BI, Tableau, Google Analytics, Google Ads, Git, AWS

Machine Learning & Engineering: Scikit-learn, TensorFlow, Random Forest, CNNs, ARIMA, clustering, NLP/embeddings, FAISS, open-source LLMs, Elasticsearch, Streamlit, model evaluation

PROFESSIONAL EXPERIENCE

Junior Engineer | BART (Bay Area Rapid Transit), Oakland, CA

Nov 2024 - Present

- **Fare-gate analytics:** Analyze passage logs, AI-camera detections, and field observations at three case-study stations; findings informed gate software changes credited with a 30% decline in observed fare evasion. Found ADA/wheelchair gates drove ~40% of incidents and built Power BI dashboards to target mitigation pilots.
- **Train false-occupancy analysis:** Reconcile equipment logs, work orders, and manager notes into a verified false-occupancy history; SQL/Python analysis identified low receiver thresholds (~32.7%), data-bit mismatch (~30%), and wiring issues (~15%) as leading cause groups.
- **Maintenance AI platform:** Built on the RAG prototype developed during my internship to create an Elasticsearch-based troubleshooting assistant that helps maintenance technicians find relevant guidance from technical manuals and similar historical work orders. Designed the ingestion, embedding, and retrieval pipeline that powers the assistant.

Computer Science Intern | BART (Bay Area Rapid Transit), Oakland, CA

Jun 2024 - Aug 2024

- Built a fully offline RAG maintenance assistant in Python using text chunking, embeddings, FAISS, and local open-source LLMs to index five years of work orders and technical manuals with zero sensitive operational data sent to cloud services.
- Designed the retrieval and ranking workflow using cosine similarity to surface similar past work orders, built the Streamlit interface, and partnered with maintenance staff to validate recommendation quality and usability.

Data Science Program Participant | Massachusetts Institute of Technology, Cambridge, MA

Jan 2024 - Apr 2024

- Completed a four-month, industry-mentored program with forecasting, computer vision, and classification projects, cleaning and modeling 10+ GB of data with Python, SQL, Pandas, Scikit-learn, and TensorFlow.
- Built an ARIMA sales forecast (92% accuracy), TensorFlow malaria-detection CNN (85% precision), handwritten digit recognition, movie recommendation, geographic clustering, and market analysis projects.

Student Bioinformatics Researcher | Loyola Marymount University, Los Angeles, CA

Jan 2022 - Apr 2023

- Contributed to GRNsight, an open-source bioinformatics tool, by debugging front-end behavior and tracing PostgreSQL-backed gene-network data so biological relationships rendered accurately in interactive visualizations.
- Collaborated in a shared Git codebase with computer science and biology researchers, translated feedback into interface/data-flow improvements, and presented the work to 200+ attendees at LMU's annual research symposium.

SELECTED PROJECTS

Marketing & Growth Analytics Volunteer, CTTG Nonprofit Organization

- Analyzed volunteer search behavior in Google Analytics and Google Ads, identified keyword and visibility gaps, and restructured campaign tracking and targeting to improve discoverability.

2024 LMU Datathon - 3rd Place, Loyola Marymount University

- Led a four-person team in a 24-hour R and Tableau analysis of EPA contract data, surfacing opportunities for underrepresented businesses and presenting decision-ready insights to entrepreneurs and industry mentors.

EDUCATION

M.S., Data Science and Engineering (Online), University of California, Los Angeles

Sep 2024 - Expected Aug 2027

B.S., Computer Science, Loyola Marymount University

Aug 2020 - May 2024