

RAJAGOPAL SOMASKANDAN

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PROFESSIONAL SUMMARY

Applied Machine Learning Engineer with hands-on experience building end-to-end, production-style ML systems for fraud detection, semantic search, and ranking problems. Strong focus on model performance, explainability using SHAP, and business-aligned evaluation with XGBoost, LightGBM, and modern NLP pipelines deployed via FastAPI.

SKILLS

- **Programming & Databases:** Python, Java, SQL (PostgreSQL, MySQL), MongoDB
- **Machine Learning:** Supervised and Unsupervised Learning, Feature Engineering, Model Training, Hyperparameter Tuning, Evaluation Metrics
- **ML Algorithms:** Linear Regression, Logistic Regression, Decision Trees, Random Forest, XGBoost, LightGBM
- **NLP & Generative AI:** Transformers, spaCy, NLTK, Sentence Embeddings, Semantic Search, Retrieval-Augmented Generation (RAG), Prompt Engineering, LangChain, ChromaDB
- **Data Analysis & Visualization:** Pandas, NumPy, Matplotlib, Plotly, Streamlit, Power BI
- **APIs, Deployment & Tools:** FastAPI, Flask, REST APIs, Docker, Git/GitHub, MLflow, AWS (Basics)

EDUCATION

Sathyabama Institute of Science and Technology

B.Sc. Computer Science (AI Specialization), First Class

M.Sc. Computer Science

Chennai, India

May 2025

Expected 2027

PROJECTS

FinGuard Pro: Explainable AI for Financial Fraud Detection

2025

github.com/Somaskandan931/FinGuardPro

- Architected an end-to-end fraud detection and risk scoring pipeline using Python, SQL, and XGBoost on a synthetically generated, highly imbalanced UPI transaction dataset
- Engineered features and optimized decision thresholds to achieve **94% recall** with a **ROC-AUC of 0.995**, balancing fraud detection and false-positive rates
- Integrated SHAP-based model explainability to enable transaction-level root-cause analysis for audit and compliance workflows
- Designed rule-based AML screening logic using velocity and structuring patterns to reduce noise in rule-triggered alerts

SourceUp: Explainable Procurement Intelligence Platform

2025

github.com/Somaskandan931/SourceUp

- Built a semantic supplier search engine using Sentence-BERT embeddings and FAISS to eliminate infeasible matches and improve sourcing efficiency
- Trained a LightGBM learning-to-rank model to optimize result relevance, achieving **NDCG@10 of 0.7439 (+9.2%)**
- Deployed scalable FastAPI microservices with Redis caching to support low-latency semantic retrieval across **10k+ validated supplier profiles**

CareerGenie: Resume-to-Job Matching System (RAG)

2025

github.com/Somaskandan931/CareerGenie

- Implemented a Retrieval-Augmented Generation pipeline combining semantic retrieval with LLM reasoning for resume to job matching
- Designed embedding-based indexing using Sentence-Transformers and ChromaDB to enable query-aware and location-aware retrieval
- Developed an ATS-optimized resume generation module that converts structured candidate profiles into LaTeX resumes

EXPERIENCE

Data Analyst Intern | India Advocacy

Jul 2024 – Oct 2024

Chennai, India

- Cleaned, filtered, and structured over 1M web records and reduced to 15-20k records to support targeted outreach campaigns
- Built automated data extraction pipelines using Java and Selenium to improve data collection efficiency
- Worked with real-world data quality issues, implementing validation checks aligned with business usability requirements

Security Trooper (National Service) | Singapore Armed Forces

Jan 2020 – Jan 2022

Singapore

- Supported security operations, operated authorized transport vehicles under regulated operational environments and assisted Ministry of Health COVID-19 task force initiatives through structured data collection and reporting

Sales Associate (Part-Time) | Bata

Feb 2022 – Aug 2022

Singapore

- Worked in a high-volume retail environment, managing customer interactions and daily operational responsibilities with strong communication, time management, and teamwork skills

CERTIFICATIONS

AI and Machine Learning, SpaceZee Technologies

Jun 2024

Python Core, SpaceZee Technologies

Feb 2024

PUBLICATIONS

FinGuard Pro: Explainable AI for Financial Fraud Detection, ICAAIC 2025 (ISBN: 979-8-3315-6587-9)
Real-Time Explainable Fake News Detection using BERT-LSTM, ICASET 2025