

# CHRISTINA RAICHEL FRANCIS

## Machine Learning Engineer

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Dynamic engineer with a Master's degree possessing a profound understanding of machine learning. Passionate about crafting ML system architectures, actively contributing to Gen AI initiatives, and collaborating on the development of scalable data systems.

### Skills

- **Data stores and Databases:** Weaviate (VectorDB), Snowflake, S3
- **Data processing:** Python, Pyspark DF
- **Cloud ML:** AWS Sagemaker, Lambda, ECR
- **Orchestration:** Airflow, Mlflow
- **Testing and quality :** Pytest, Pylint
- **CI/CD:** Git, Github Actions
- **DL Frameworks:** Tensorflow, Opencv
- **Data analytics:** Numpy, Pandas, Sklearn, Postgresql, Seaborn, Matplotlib
- **Real-time transport:** Kafka, Kinesis
- **Model deployment:** Docker, Flask, Fastapi
- **Data structures & algorithms**
- **Frontend:** React, Tailwind CSS, JS/TS

### Qualifications

- AWS Certified Machine Learning Specialty, Amazon Web Services, September 2022
- TensorFlow Developer Certification, DeepLearning.AI, Coursera, June 2020

### Work history

#### Machine Learning Engineer

SELF EMPLOYED, London

May 2023 - current

- Created and deployed a web application for task based code generation, utilising Hugging Face datasets, vector search and pseudocode development employing RAG and Cohere API, achieving response times of less than 5 seconds
- Implemented a web application for recipe recommendations by employing embeddings and similarity scoring to match user preferences with suitable recipes. Integrated OpenAI's language models to enhance NLP capabilities, increasing user satisfaction by 20%
- Engineered a recommendation system for e-commerce, leveraging user purchase history to provide product recommendations to users and achieved 20% increased user engagement
- Developed federated book recommender engines and obtained performances comparable to non federated versions while implementing 75% increased privacy for users
- Deployed a ride trip duration prediction application on AWS cloud, which provided real time predictions on streaming events with less than 200ms latency
- Categorised protein sequences as non-antibiotic-resistant or resistant, including subclass categorization utilising Protrans Masked LLM based embeddings and achieved precision and recall rates exceeding 93%
- Built a recommendation engine and delivered recommendations based on users' recent page visits, driving a 20% reduction in bounce rate

### **Data Engineer, AI and Analytics**

COGNIZANT TECHNOLOGY SOLUTIONS, Kochi, INDIA

September 2022 - May 2023

- Conducted ETL operations on data pipelines for machine learning projects, implemented optimization strategies resulting in 10% increase in execution efficiency
- Conducted in-depth research on distributed computing techniques, implementing best practices to optimise data processing and reducing execution time by 40%
- Actively participated in and contributed to over 3 workshops and training sessions, enhancing team knowledge in optimization techniques and best practices

### **Junior Telecom Officer, Network Operations**

BHARAT SANCHAR NIGAM LIMITED (BSNL), Kerala Circle, INDIA

March 2018 - May 2022

- Leveraged Python to develop independent interfaces for monitoring over 100 telecom cells and 1 Cr+ subscribers, yielding a remarkable 75% reduction in query time
- Employed SQL queries to manage the databases and to create daily reports encompassing a vast customer base of over 30 lakh postpaid and 90 lakh prepaid subscriber
- Delivered essential data analysis and reporting support, significantly enhancing customer service and driving revenue growth by 5%
- Collaborated with radio team in the organisation and vendors, improving user retention and customer experience by 40%
- Orchestrated a customer service initiative and achieved a decrease in complaint numbers by 40% within the first six months of implementation

## **Education**

### **Master of Technology in Signal Processing**

College of Engineering, Trivandrum, India

August 2016

- *Relevant courses:* Machine learning, Probability and statistics

### **Bachelor of Technology in Electronics & Communication Engineering**

Government Engineering College, Thrissur, India

August 2014

## **Publications**

- A scale invariant technique for detection of voice disorders using Modified Mellin Transform International Conference on Emerging Technological Trends (ICETT). IEEE, October 2016.