

# JOSHUA ALFRED JAYAPAL

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## EDUCATION

### M.S., Computer Science

New York University, Brooklyn, NY

Expected May 2025

GPA: 3.77

Relevant coursework: Software Engineering, Big Data, Machine Learning

### B.Tech., Electronics and Communication Engineering

Vellore Institute of Technology, Chennai, India

Graduated May 2023

GPA: 3.72

Relevant coursework: Essentials of Data Analytics, Deep Learning, Applied Linear Algebra

## SKILLS

**Data Analytics and ML:** PyTorch, NumPy, PySpark, Apache Airflow, Data Build Tool, Airbyte, LlamaIndex

**Development Tools:** Django, Flask, PostgreSQL, Power BI, GitHub, AWS, Travis CI

**Programming:** Python, Java, MATLAB, SQL, R

**Certification:** AWS Certified Cloud Practitioner [CLF-01] – June 2022

**Soft Skills:** Problem Solving, Team player, Effective Time Management, Communication, Fast Learner

## EXPERIENCE

### Mphasis Javelina, Phoenix, AZ: Data Analyst Intern

June 2024 – Present

- Performing **extensive SQL querying, power queries, explanatory data analysis and visualizations** of auto-adjudicated claims data based on patient and provider demographics (Streamlit, Power BI, PostgreSQL)
- Managing ETL pipelines** to migrate claims data to on-premises (Airbyte, Data Build Tool, Apache Airflow)
- Building a domain-specific RAG pipeline** to address queries regarding the application database (LlamaIndex)

### Technocolabs Softwares Limited, Indore, India: Machine Learning Engineer Intern

Oct 2022 – Dec 2022

- Designed a predictive machine learning pipeline for **financial risk assessment**, as a web application (Python, R)
- Optimized various classification and regression models for predicting loan status, repayment years, EMI, and ROI, achieving **98% testing accuracy** (Scikit-Learn, Django)

### Mphasis Limited, Chennai, India: Java Developer Intern

May 2022 – Jun 2022

- Developed a web-based **Insurance Underwriting application**, innovatively rating risk profiles and detecting inconsistencies through social media and fitness records (Java, Servlets, JSP) and revolutionized premium calculation with an advanced algorithm, **enhancing efficiency by 16%** over the previous version
- Architected a user interface for insurance applications, managing data storage (MySQL), facilitating API interactions with applicant profiles, and implementing object detection (AWS Rekognition)

## PROJECTS

### VibeCheck

Sep 2023 – Dec 2023

Spearheaded a team of 5 to produce an app that **matches users by their listening patterns** and their "vibe" patterns using Spotify and OpenAI APIs.

- Developed the backend API interactions between the application, database, and AI models (Django, postgresSQL)
- Deployed the application using AWS/Travis with **87% coverage** and **114 issues closed**

### Automated hand movement recognition model using Spiking Neural Networks

Mar 2022 – Sep 2022

Collaborated as a Research Intern in a team of two to analyze deep learning models to classify hand movement signals.

- Acquired **motor imagery EEG signals** using BCI technology and prepared a dataset to train a Spiking Neural Network and a Convolutional Neural Network and analyze their performances on hand-movement detection (TensorFlow, Keras)
- Achieved an impressive **97.38% testing accuracy** for the SNN, ideal for recognizing movements in a robotic arm

## PUBLICATIONS

- Inception-Based Global Context Attention Network for the Classification of Coffee Leaf Diseases**, Ecological Informatics, **Impact Factor: 5.1**, **Authors:** Dr. R. Karthik, Joshua Alfred J., Joel Kennedy J.

## ACTIVITIES

### Programming Team Member, AUVSI, Chennai, India

Aug 2020 - Mar 2021

Developed real-time image-based road crack detection algorithms for drone surveillance of airport runways (**MATLAB**)