JOSHUA ALFRED JAYAPAL

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EDUCATION

M.S., Computer Science — Expected May 2025
New York University, Brooklyn, NY — GPA: 3.77
Relevant coursework: Software Engineering, Big Data, Machine Learning

B.Tech., Electronics and Communication Engineering — Graduated May 2023
Vellore Institute of Technology, Chennai, India — 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, postgreSQL)
- 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**)