Prashant Arya

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Results-oriented software engineering professional with a positive attitude, skilled in designing, installing, testing, and maintaining software systems. Adept in various programming languages, platforms, and embedded systems. Hands-on expertise in Machine Learning & Artificial Intelligence techniques, with detailed knowledge of machine learning evaluation metrics. Strong mathematical skills for predictive analysis, data mining, and computational statistics. Capable of managing independent projects and thriving as a collaborative team member.

Education

Master of Science in Computer Science with Artificial Intelligence   **September 2022 - November 2023**
University of Nottingham at UK
Dissertation Marks: 80/100
Final Grade: Passed with Merit

Bachelor of Technology in Electronics and Communications   **July 2015 - May 2019**
Jaypee University of Information Technology (JUIT), India
CGPA: 7.4 (74% According to University conversion table)

Certifications

- Machine Learning by Andrew Ng by Coursera   September, 2019
- DeepLearning.AI Professional TensorFlow Developer by Coursera   September, 2022

Professional Experience

Cognizant Technology Solutions   **October 2019 - August 2022**
Associate Developer

- Utilised **Java Spring Boot**, **Git**, **SQL**, and **Linux shell scripting** to improve system stability and security by **24%**, fortifying it against potential vulnerabilities.
- Integrated technology components to enhance system performance, via **Jenkins,** and established **CI/CD** practices.
- Led the **Systems Development LifeCycle**, from requirements gathering to product release into production.
- Implemented **Docker** on applications to remove manual intervention and dependencies related errors.
- Optimised functionality and improved user experience by conducting thorough **Unit and Integration testing**.
- Applied security patches, database connection upgrades, and dependency updates, for a financial institution.

Reliance Jio   **June 2018 - August 2018**
Network Intern

- Enforced an automated solution for digitally signing TRAI certifications using **Python** and **PyAutoGUI**, reducing manual effort by **30%**.
- Analysed the network reports and customer feedback to suggest optimal 5G transmitter placements.
- Produced reports and interactive dashboards using **Excel** and presented it to senior management.

A-Set Training and Research Institute   **May 2017 - August 2017**
Research Assistant

- Automated steel coil production utilising **Python Flask framework**, enhancing operational efficiency by **35%**.
- Presented the innovative **GUI** to **stakeholders**, showcasing its potential impact and garnering positive feedback.
- Deployed the software in factories, providing training and documentation to stakeholders for efficient utilisation.

Projects

Driver Fatigue Detection using CNN   **September, 2023**
Dissertation, University of Nottingham

- Developed a driver fatigue detection system with real-time capabilities with a **0.02s** response time.
- Utilised a diverse dataset of 42,000 images to train the model which combined **Computer Vision (OpenCV)** and **Deep Learning**.
- Extracted five facial attributes to be used as independent features in the **Convolutional Neural Network (CNN)** architecture.
- Employed **Keras** from the **TensorFlow** package to augment the different features, improving model accuracy.
- Achieved **97.9%** prediction accuracy from the proposed architecture.

Predicting Operating Conditions of Water Pump   **May, 2023**
Data Science with Machine Learning, University of Nottingham

- Pre-processed raw data from Tanzania Ministry of Water while normalising for subsequent analysis.
- Employed **SVM**, **Random Forest**, and **Multi-layered Perceptron** machine learning methods to scrutinise the dataset.
- Identified **feature importance**, using **Decision Trees** and correlation, to facilitate feature selection.
- Utilised **Long Short-Term Memory (LSTM) Network** to predict the water pump operating conditions.
- Visualised data using **Power BI** to facilitate comprehension for business-oriented personnel.

Imbalance Multi-label Classification   **May, 2023**
Big Data Analytics, University of Nottingham

- Addressed challenges posed in **Big Data** by imbalanced datasets in multi-label classification using **PySpark**.
- Implemented **Random Over-Sampling**, **Under-Sampling**, and innovative **SMOTE** using **Scikit-Learn**, to enhance accuracy in distributed environments.
- Catered to multiple classes, demonstrating superior performance in classification models compared to traditional sampling techniques.

Jarvis   **February, 2022**
Personal Project

- **Automated** Minecraft Server queries to be executed through a Bot using **DiscordPy** and **GUI** without manual intervention.
- Implemented **API** connections using **FastAPI** to link the chatbot, Discord Bot, Minecraft Server, and GUI.
- Trained a chatbot using **NLP**, **LSTMs** and **Seq2Seq** models on Cornel Corpus dataset.
- Deployed the project on **Raspberry Pi**.

Skills

Programming Languages: **Python** | **Java** | **C** | **C++** | **Embedded C** | **MATLAB** | **JavaScript** | **CSS** | **SQL**
Frameworks & Software: **Spring Boot** | **Excel** | **Apache Spark** | **Pandas** | **NumPy** | **TensorFlow** | **Scikit-Learn** | **Flask** | **OpenCV** | **Selenium** | **FastAPI** | **MongoDB** | **Jenkins** | **Power BI** | **Tableau** | **Heroku** | **ServiceNow** | **Docker**
Soft Skills: **Problem Solving** | **Creativity** | **Teamwork** | **Adaptability** | **Analytical Skills** | **Time Management**
Technical Skills: **Artificial Intelligence** | **Machine Learning** | **Data Analytics** | **Data Science** | **Data Visualisation** | **Trouble Shooting** | **Root Cause Analysis**

Accomplishments

- Elected as the Chairperson of Association of Computing Machinery (ACM) JUIT Chapter for 2018-19.
- Appointed as the Electronics Team Head of ACM JUIT Chapter for the 2017-18 academic year.
- Nominated as the first Campus Ambassador of GeeksforGeeks for JUIT in 2016.
- Secured first place at Spotlight Event – ECE at Cognizance 2016, Indian Institute of Technology Roorkee.
- First runner-up at Startup Protothon 17 by H.P. Centre Entrepreneurship Development (HPCED), India.
- Received gold medal for achieving 100% score in Computer Science in ISC (class 12th) Examinations 2015.