PAJOBO ROY BAGATI

BSc Computer Science Graduate & MSc Artificial Intelligence Student

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Profile Summary

Dynamic AI specialist and software Tester with hands-on experience in designing and executing robust testing methodologies to ensure software quality and reliability. Holding a solid academic foundation, a BSc with Honors in Computer Science and an MSc in Artificial Intelligence. Passionate about harnessing AI and machine learning to optimize software development processes and enhance operational efficiency. Proven ability to conceptualize and deliver end-to-end software projects while collaborating effectively with cross-functional teams. Driven by a commitment to continuous learning, innovation, and creating impactful, data-driven solutions that meet and exceed industry standards.

KEY SKILLS

1. **Programming Languages:** Python (Strongest), Java, HTML5, CSS, JavaScript, PHP, MATLAB, C++
2. **Artificial Intelligence & Machine Learning:** Autonomous Systems & Planning (STRIPS, Finite Domain Representation, Planning in PDDL)**,** Neural Networks (RNN, CNN), Generative Models, Reinforcement Learning, TensorFlow, Keras.
3. **Data Analysis & BI Systems:** Regression, Classification, Clustering (AHC), PyTorch, pandas, numpy, Power BI, Tableau, Data Warehousing, Data Mining.
4. **Web Development:** Full-stack web development, Post and comment web app (Python Flask).
5. **Software Testing:** Integration, Compatibility, Functional, Sanity, JMeter testing.
6. **Version Control:** Git, GitHub
7. **Agile Methodologies & Project Management**
8. **IoT Systems:** Practical applications and understanding of Internet of Things.

WORK EXPERIENCE

Trainee Software Tester (Internship)

Hi Tech Plus, London | Sept 2022 – Mar 2023

- Designed and executed test scenarios for new software updates, ensuring product integrity and functionality.
- Collaborated with development teams to identify and resolve 60+ critical bugs, improving software stability by 15%.
- Produced detailed reports on testing outcomes, providing actionable feedback to enhance product performance.
- Implemented risk-based testing techniques to prioritize high-impact areas, contributing to the reduction of post-release defects.
- Executed various tests that included; unit tests, integrated testing, compatibility testing, integration testing functional testing, sanity testing, and jmeter testing.

Key Achievement:

- Successfully identified critical vulnerabilities early in the development cycle, reducing the number of bugs in the final product by 20%.

PROJECTS & PORTFOLIO (Available on my GitHub)

Autonomous Taxi System (Pathfinding and Model verification)

- Developed an autonomous taxi system leveraging A*, BFS, DFS algorithms for efficient pathfinding in urban environments. Implementing model verification with Z3Py to ensure logic accuracy and compliance with predefined safety standards contributing to robust autonomous navigation.
- **Technologies**: Python, A*, BFS, DFS, Z3, Bounded Model Checking

Tower of Hanoi

- Built a Python program to solve the **Tower of Hanio** using breadth-first search (BFS) and A* algorithms, demonstrating the efficiency of different search strategies in recursive problem solving.
- Conducted comparative analysis to evaluate the performance of algorithms under various conditions.
- Technologies: Python, BFS, A*, Recursion.

Neural Network Classifier (MNIST)

- Designed and implemented a NN classifier to recognise handwritten digits from the MNIST dataset. Utilised TensorFlow to build and train the model, achieving over 95% accuracy on test data.
- Technologies: Python, TensorFlow, Keras, Jupyter Notebook, NN (fully connected).

PDDL Domains and Search

- Developed PDDL domains and applied search algorithms to solve various planning problems. Explored STRIPS and other representations to handle complex AI planning tasks.
- Technologies: PDDL, STRIPS, A* (Fast-Downward), VScode.

Logistic Regression Model

- Built and trained a logistic regression model to classify data for a predictive modelling project. Explored relationships between variables and the logistic function to make accurate predictions.
- Technologies: Python, Jupyter Notebook, Scikit-learn, Matplotlib, NumPy, Pandas, Logistic Regression.

Agglomerative Hierarchical Clustering (AHC)

- Implemented AHC using python to analyse and visualise clusters in a dataset, using dendrograms to illustrarte the hierarchical relationships among data points.
- Technologies: Python, Jupyter Notebook, Scikit-learn, Matplotlib, AHC.

Education

MSc Artificial Intelligence

Royal Holloway University of London | 2023 – 2024

- **Relevant Modules**: Deep Learning, Autonomous Systems, Data Analysis, BI Systems, Ethics in Artificial Intelligence, Formal Verification.
- **Project**: Exploring Satisfiability Modulo Theories and Bounded Model Checking in AI Planning

BSC Computer Science with Honors

Oxford Brookes University | 2018 – 2022

- **Relevant Modules:** Artificial Intelligence, Machine Learning, Game Development, DevOps, Databases, Internet of Things, Principles of Secure Operating Systems, Software Engineering, Advanced OOP, WebApp.
- **Final Year Project:** Predictive Modelling for malaria outbreaks using logistic regression and clustering techniques.

Achievements

- **University Agile Project:** Successfully developed a mobile application focused on student well-being, aimed at addressing the growing mental health crisis among university students. Led the project from ideation to prototype stage, utilizing Agile methodologies.

Interests

- AI research, Autonomous Systems, Neural Networks, Data Analysis, Ethical AI development.