Deron Martin

Machine Learning Engineer

Gurugram, Haryana | 8826201971 | deronjudemartin@gmail.com | LinkedIn | GitHub

Profile

Self-motivated and detail-oriented Computer Science Master's graduate with a focus on **machine learning**, **data mining**, and **artificial intelligence**. Proficient in designing and implementing machine learning models from scratch, with expertise in **Python**, **TensorFlow**, and **PyTorch**. Led projects in recommender systems, feature selection, and gesture recognition using advanced algorithms (regression, decision trees, CNNs). Passionate about leveraging ML techniques to solve real-world challenges and deliver innovative, data-driven solutions.

Education

University of California, Riverside | M.Sc. Computer Science | 2021 – 2022 |
GPA: 3.17/4.00 | Coursework: DBMS, Computer Architecture, Data Mining, Artificial Intelligence

Vellore Institute of Technology, Vellore | B.Tech. Computer Science | 2016 – 2020 |
CGPA: 8.19/10.00 | Coursework: Software Engineering, Data Structures, Web Development

Experience

Data Science Intern | Lawrence Livermore National Laboratory | 06/2022 - 07/2022

- Utilized machine learning algorithms to analyze 20,000 drugs, identifying potential treatments for COVID-19, contributing to advanced research outcomes.
- Cleaned and processed complex datasets using **NumPy** and **Pandas.**
- Engineered and fine-tuned **regression models**, **random forests**, and **neural networks** using **scikit-learn** and **PyTorch**, achieving 84% prediction accuracy**.**
- Implemented **voxelization** algorithm based on research, enabling advanced drug **visualization**, which facilitated new insights.

Python Development Intern | Naaniz | 09/2020 - 11/2020

- Automated poster generation using **OpenCV**, decreasing distribution time by 25% and enhancing efficiency in content delivery.
- Designed and implemented **AWS EC2** solution, reducing data retrieval latency by 20%.
- Co-developed a **REST API** with backend team, leveraging automation tools to improve generation time by 30% and streamline operations.

Skills

- **Programming:** Python, C/C++
- **ML and AI:** TensorFlow, PyTorch, Keras, scikit-learn, Hyperparameter Tuning, OpenCV
- **Data Processing:** NumPy, Pandas
- **Web Development:** HTML, CSS, JavaScript, NodeJS, ExpressJS, Flask
- **Databases:** MySQL, MongoDB

Projects

Spotify Recommender System | GitHub

- Developed a song recommender system for Spotify, focusing on **feature engineering** and **data preprocessing** to optimize model performance.
- Built and tuned models (Regression, Decision Trees, Random Forests, xGBoost, SVM) for personalized song recommendations.
- Achieved optimal results by recreating each algorithm from scratch in **Python**, with validation through cross-comparison against Spotify's recommendation engine.

Feature Selection for Dimension Reduction | GitHub

- Designed and implemented a **feature selection algorithm** to reduce the dimensionality of a large dataset for improved model performance.
- Utilized both **forward selection** and **backward selection** techniques to identify the most relevant features, improving model accuracy by 30%.
- Reduced feature space by 35%, leading to a noticeable reduction in model training time.

Mosquito Simulation Using Monte Carlo Methods | GitHub | YouTube

- Created a probabilistic simulation to estimate the likelihood of a mosquito biting a human based on relative positions and the mosquito's flight range.
- Applied the **Monte Carlo method**, generating random values to simulate outcomes and estimate probabilities of events with complex variables.
- Enabled accurate estimation of mosquito bite probability by simulating a large number of outcomes.

Gesture UI with Hand Gesture Recognition | GitHub

- Developed a gesture-based UI system using **OpenCV** and **Python** to control system functions based on hand gestures.
- Created a dataset of 10 distinct hand gestures using **image augmentation** to improve model accuracy, and trained various **CNNs** with **Keras** and **TensorFlow**.
- Achieved 90%+ accuracy in recognizing gestures, which were linked to meaningful actions via the **Windows API**, such as controlling music playback.