DHANESH RAJU
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Greater London, United Kingdom.

Artificial Intelligence professional with a passion for solving real-world problems through machine learning and data driven systems. Experienced in Time Series Forecasting, Deep Learning, and Model Deployment in both industrial and healthcare settings. Currently focused on leveraging AI to support predictive analytics and risk modeling. Proven expertise in delivering end to end ML solutions with real world impact in Healthcare and Industry. Bridging AI capabilities with Brain Computer Interface to propose Human Cognitive Intelligence.

SKILLS:

Programming language: Python, SQL, C, C++.
ML and Statistical Tools: TensorFlow, Keras, Pandas, NumPy, MLflow, Scikit-learn
Data Science Techniques: Survival analysis, Cox Regression, Data Preprocessing, Time-Series modeling.
Frameworks: OpenNN, GTK, RAG, Hugging Face, LangChain, NLP (spaCy, NLTK), OpenCV, FAISS.
Developing and Deployment: Git, Bash Scripting, Clusters, GPU's, HPC environments, Docker, DVC.
Management Tools: GitHub, GitLab, Jira, Agile Workflows, Confluence.
Operating System: Linux, Mac, Windows

WORK EXPERIENCE:

Data Engineer & LLM Development | Fluck | Colchester | United Kingdom. **Oct 2024-Present**

- Designed and developed modular NLP pipelines for processing unstructured text across diverse business verticals, enabling domain specific fine tuning of LLMs and retrieval systems.
- Applied techniques such as TF-IDF, embeddings, and topic modeling to enhance document understanding, classification, and information retrieval across financial legal and behavioral datasets.
- Integrated Retrieval Augmented Generation (RAG) frameworks with custom API's and secure workflows to power explainable AI tools in a pre-launch product ecosystem.
- Collaborated with engineers, data scientists, and business leads to build scalable pipelines and document AI system components in line with compliance and deployment goals.

Deep Learning Research Intern | Stuart Turner & AGM | Colchester. **Jan 2024-Sep 2024**

- Build deep learning systems using TensorFlow to detect real-time anomalies in industrial pump performance, enabling predictive maintenance and reducing system downtime.
- Combined fuzzy logic and explainable AI layers to improve model transparency and stakeholder trust in the industrial diagnostics and monitoring platform.
- Designed and tested end to end systems with the live dashboards that interfaced AI model outputs with real-time sensor data from pump's in manufacturing environments.
- Engaged in weekly feedback looks with engineering and product teams, refining model architecture and deploying improvements based on operational performance insights.

EDUCATION:

Master of Science in Artificial Intelligence. **Oct 2023–Oct 2024**
University of Essex| Colchester| United Kingdom.
Specialised Knowledge: Neural Networks, Deep Learning, Statistical Modeling, XAI, Robotics, NLP, Decision Making.

KPR Institute of Engineering and Technology | Coimbatore | India. **Aug 2018-May 2022**
Bachelor of Engineering in Electronics and Communication Engineering.
Specialised Knowledge: Internet of Things, Signal Processing, Robotics and Automation and Cloud Computing.

ACADEMIC PROJECTS:

Renewable Energy Surplus Forecasting | University of Essex. **Jan 2024-Apr 2024**

- Build robust ML pipelines using TensorFlow and Scikit Learn to predict renewable energy surplus in a smart grid environment, enhancing forecasting capabilities for demand supply balancing.
- Engineered time series features such as lag variables, rolling averages, and weather based predictors to optimize input data for model accuracy and performance in the real time environment.
- Applied cross validation, grid search, and feature selection techniques to fine tune hyperparameters and increase model generalization under varying energy consumption scenarios.
- Presented model insights to stakeholders sessions, translating complex predictions into actionable strategies for sustainable energy management.

Sleep Stage Classification with ML | University of Essex. **Jan 2024-Mar 2024**

- Designed a GPU accelerated neural network to classify sleep stages from EEG based polysomnographic signals, leveraging deep learning to support medical diagnostics.
- Applied bandpass filtering, downsampling, and segmentation to transform raw signals into meaningful time series features for precise model training.
- Conducted exploratory data analysis and correlation studies to identify stages specific biomarkers, improving interpretability and classification confidence.
- Shared research outcomes through academic presentations and collaborative review sessions, reinforcing clinical relevance and interdisciplinary value.

Prostate Cancer & Epilepsy Detection | University of Southern Denmark. **Aug 2024-Sep 2024**

- Build CNN model to classify prostate cancer stages from MRI data and LSTM networks to detect seizure activity from EEG recordings, showcasing diverse deep learning applications in healthcare.
- Performed advance preprocessing techniques such as normalization, signals clipping, and spatial masking to prepare inputs aligned with the clinical diagnosis needs.
- Employs SHAP and Grad-CAM to visualize model attention and enhance prediction transparency.
- Collaborated with clinical partners including radiologists and neurologists to validate outputs, gaining practical insights into medical AI tools and deployment.

Advance Control Architecture for TurtleBot3 (ROS) | University of Essex. **Oct 2023-Dec 2023**

- Developed a hybrid robotic control system using PID controllers, fuzzy logic, and obstacle avoidance as combination of subsumption architecture algorithms to optimize navigation and adaptability.
- Implement control structures within the Robot Operating System (ROS) environment, integrating real time decision making into mobile robotics.
- Conducted iterative testing in simulated and physical settings, adjusting control parameters based on environmental feedback and performance metrics.
- Took lead on code documentation and team collaboration ensuring smooth development cycles, reproducibility, and effective handover during testing phases..

PROFESSIONAL DEVELOPMENT:

Summer School - Artificial Intelligence in Healthcare. **Aug 2024-Aug 2024**
University Of Southern Denmark | Odense | Denmark.
Specialised Knowledge: Medical Imaging (MRI/EEG), Disease Classification, Clinical Model Interpretation.

Artificial Intelligence and Machine Learning Training. **Oct 2020-May 2021**
Xebia Academy | Bangalore | India.
Specialised Knowledge: Python for AI, Data Preprocessing, Supervised Learning, Model Deployment.