Dino Babu

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INTRODUCTION

Introduction

Accomplished ML Engineer with 6+ years of experience driving innovation through scalable solutions. Expertise in end-to-end development, strategic leadership, and cross-functional collaboration. Proven track record of delivering impactful ML products, mentoring teams, and fostering a culture of excellence. MTech from IIT Madras, recognized for advancing AI/ML capabilities at global tech leaders including Dyson, Alstom, and GE

DIGITAL SKILLS

Python | AI platform: Pytorch, Tensorflow etc. | Git | Scikit-Learn | Computer Vision | Artificial Intelligence and Machine Learning concepts | Natural Language processing | Pattern recognition | Unsupervised learning | LLMs | Generative AI | AWS | MLOPS

Core skills

Cross-team coordination | Stakeholder communication | collaborative skills | management | Leadership

WORK EXPERIENCE

01/01/2023 – CURRENT Malmesbury, United Kingdom

ASSOCIATE PRINCIPAL ML ENGINEER DYSON TECHNOLOGY LIMITED

Achievements:

- Led the end to end development and deployment of cutting-edge ML features, driving innovation and business impact.
- Developed scalable, production-ready code for seamless deployment.
- Leveraged cloud computing technologies to execute advanced algorithms, optimizing performance.
- Exhibited exceptional cross-functional collaboration, ensuring seamless delivery of high-impact ML products in partnership with upstream and downstream teams.
- Implemented and enforced best practices for algorithm development.
- Played a key role in strategic ML architecture discussions.
- Rapidly developed high-quality proof of concepts, building stakeholder confidence and driving project buy-in.
- Strategically planned and executed comprehensive data trials for ML algorithm development.
- Provided strong technical leadership and mentorship, steering 6 innovation projects to critical milestones and fostering a culture of innovation and excellence

Business or Sector Professional, scientific and technical activities | **Department** Research

22/02/2022 – 01/01/2023 Malmesbury, United Kingdom

MACHINE LEARNING MANAGER DYSON TECHNOLOGY LIMITED

Achievements :

- Delivered a comprehensive and strategic technology roadmap for the Machine Learning team, aligning innovation with long-term business objectives.
- Led talent acquisition efforts, successfully conducting interviews to attract top-tier ML talent and strengthen the team's capabilities.

- Forged successful partnerships with external vendors, driving efficient data acquisition and labeling processes that accelerated project timelines.
- Conducted thorough performance reviews for direct reports, actively supporting their career growth and fostering a high-performance culture within the team.

Business or Sector Professional, scientific and technical activities | **Department** Research

28/10/2018 – CURRENT Bangalore, India

SENIOR MACHINE LEARNING ENGINEER ALSTOM TRANSPORT

Achievements:

- Established and led a high-performing Computer Vision team at Alstom, now recognized as the AI/ML skill center for all AI projects across the organization.
- Evangelized AI/ML opportunities to non-technical stakeholders, securing 9 high-impact computer vision projects from diverse departments within Alstom
- Provided expert technical mentorship to both internal team's and external contractors, driving skill development and ensuring project success.
- Awarded the Bronze Medal in the INOVEYOU 2020 competition for delivering one of the most innovative projects across Alstom
- Identified and spearheaded AI and computer vision initiatives to drive smarter, faster, and more efficient processes throughout Alstom
- Actively engaged in AI/ML communities, staying at the forefront of technological advancements through knowledge sharing and continuous learning.

Business or Sector Professional, scientific and technical activities | **Department** Digital Factory |

Address Alstom Transport IS&T, 1st Floor Lakeview Building, Bagmane Tech Park, C V Raman Nagar, Bangalore, 560093, Bangalore, India

Website https://www.alstom.com/alstom-india

KEY PROJECTS

Skin Texture Analysis from 2D images [2023 - 2024]

Predict the surface roughness of skin using a multimodal neural network that takes images and GLCM texture parameters to map corresponding 3D roughness values of the same region generated using 3D scanner. The project involves both 2D and 3D data collection and development , training and deployment of multi model neural network

Hair and Follicle analysis from Scalp Images [Dyson] [2024 - Ongoing]

Development of an Object detection Neural Network for detection and counting of hair and follicles in a given scalp image. The project involves Data collection using different imaging modalities, preparation, development and training of state of the art object detection neural networks to detect follicle and hairs. Synthetic dataset creation using stable diffusion and neural style transfer.

Domain Expertise Generation using LLM [Dyson][2024]

Build a Domain expertise tool for addressing domain knowledge on skin care applying RAG on Skin Care Journals. The Journals are transferred into latent vectors and FAISS is used to get the right context that matches the query in GPT

3D reconstruction from human facial images using SFM [Structure From Motion] [Dyson][2023-2024]

Implemented pipeline for reconstruction of overlapping human facial images into 3D cloud points using state of he art structure from motion methodology using Open SFM and Open MVS for skin texture analysis

APS Spark Detection in Trams [Alstom] [2019 - 2020]

Developed a neural network classifier to classify frames with spark/no spark from the video captured by an action camera fitted at the Auxiliary Power source [APS] of Tram. The detection is combined with the GPS location to help maintenance personnel to identify the places where sparks occurs in the tram third rail to repair.

Achievement:
Won Bronze award in INOVEYOU - 2020 competition for the best innovative project across Alstom

Tram Obstacle Detection and localization POC [Alstom][2019 - 2020]

Developed vehicle and passenger detection using LIDAR and Image data incorporating object detection algorithm. used voxel net for 3D object detection from LIDAR and YOLO algorithm for detection from 2D images. The Module detects object and calculates the distance between Tram and Object

Design Drawing Hot Spot Automation [Alstom][2019 - 2020]

Developed an object detection and NLP Algorithm to detect and read part numbers from a drawing and map it to parent assembly drawing. Development of a graphical user interface to run the automation

Signaling Circuit Automation using Deep Learning [Alstom] [2021]

Developed a deep neural network to identify signaling circuit elements and connection between elements from a signal circuit image and consolidate the information into a json format. Development of a graphical user interface to run the automation

Achievement:
Finalist in INOVEYOU - 2021 : competition for the best innovative project across Alstom

Driver Attention Detection using image processing [Alstom][2018 - 2019]

Developed an algorithm to detect the attentiveness of the tram driver using real time image head position detection and tracking. Used facial land mark detection to measure attentiveness

3D depth map generation using depth from polarization [Dyson] [2023 - 2024]

Developed a module to generate depth map from images collected using different orientation of polarizer filter using depth from polarization methodology.

Train Wheel Defect Detection [Alstom] [2019 - 2021]

Automation of wheel inspection using conventional image processing which involves, image acquisition, image stitching and 2D Fourier Analysis to detect and localize wheel defects

Aircraft Engine Dynamics Prediction using ML [General Electric][2018]

Developed a ML algorithm to predict the key modes of vibration using engine dimensions

EDUCATION AND TRAINING

19/08/2011 – 14/06/2013 Chennai, India
MASTER OF TECHNOLOGY (MTECH) Indian Institute of Technology Madras (IITM)

Address Indian Institute Of Technology, Chennai, Tamil Nadu , 600036, Chennai, India | **Website** https://www.iitm.ac.in/ |

Field of study Machine Design | **Final grade** 9.14 CGPA | **Level in EQF** EQF level 7 | **Number of credits** 66

15/08/2004 – 14/05/2008 Cochin, India
BACHELOR OF TECHNOLOGY (BTECH) Mar Athanasius College of Engineering

Address Mar Athanasius College of Engineering, College Junction Road, Kothamangalam, Kerala , 686666, Cochin, India |

Website http://www.mace.ac.in/ | **Field of study** Mechanical Eningeering | **Final grade** 78.1% | **Level in EQF** EQF level 6

LANGUAGE SKILLS

Mother tongue(s): **MALAYALAM**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	C2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user