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Yadnyesh Luktuke

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Experience

Software Engineer **Ford Motor Company** **Oct 2021 – June 2023**

Mobility Research, Agile-Development, Continuous Integration/Continuous Delivery, Driver-Passenger Experiences, Cloud Native

- Developed an AI-based object detection system for an interactive game in the Smart Car project using OpenCV & PyTorch. Achieved 85% accuracy for detecting objects on the road using the SSD (Single Shot Detection) network.
- Optimized training time by 20% through the implementation of an automated data engineering pipeline, seamlessly transferring annotated training data between local computers, Azure cloud storage, and the cloud computational platform.
- Improved project completion time by 25% and proposed memory optimization methods for the V2 release.
- Led experiments to containerize and optimize models using Docker and Apache TVM. Evaluated inference times for 4 deep learning frameworks (TFLite, MXNet, ONNX, and TFServing), providing recommendations for production models.
- Experimented with embedded devices and lightweight Kubernetes for deploying 3 variants of IoT clusters in vehicles for the Connected Car initiative and documented metrics for easy comparison.
- Enhanced Python APIs for finer control of cabin lights using the MQTT protocol in machine-to-machine communication, reducing response time by 2 *ms* for the Immersive Experience demo.

Data Scientist **Climate Connect Pvt. Ltd.** **Aug 2017 – Jan 2018**

Python Programming, Machine Learning, Renewable Energy, Web Scraping, Forecasting, SQL Databases

- Engineered data collection pipelines to scrape data from 2 weather forecasting sites and store it on a MySQL database.
- Utilized numpy, pandas, and scikit-learn to extract valuable insights from weather reports, enabling the calculation of features for training five regional models in renewable energy forecasting.
- Built 2 predictive models for predicting energy prices and solar power using deep neural networks and SVMs respectively.
- Improved forecasting accuracy by 36% for the Indian Energy Exchange (IEX) model by optimizing model training using techniques such as learning curves, feature curves, cross-validation and tuning model parameters based on these.
- Fostered collaborations with universities, resulting in the creation of 3 new renewable energy projects.

Programming skills

Languages: Python, C, MATLAB (proficient); C++, R (essential).

Technologies: Linux, Git, OpenCV, TensorFlow, PyTorch, Docker (proficient); Azure, REST API, Kubernetes (essential).

Education

MS – Computer Engineering **Clemson University, US** **Aug 2018 – May 2020**

- Graduate Coursework: Analysis of Tracking Systems, Computer Vision, Deep Learning, Statistics

MSc. – Electrical Engineering **Delft University of Technology, NL** **Sep 2014 – Jan 2017**

- Graduate Coursework: Digital Speech & Audio Processing, Machine Learning, Sensors & Actuators

BE – E & TC Engineering **Maharashtra Institute of Technology, IN** **Aug 2008 – May 2012**

- Undergraduate Coursework: Signal Processing, Data Structures & Algorithms, Applied Mathematics

Projects

Master's Thesis **Clemson University, US** **Feb 2019 – Apr 2020**

Healthcare Monitoring, Data Mining, Inertial Sensors (IMU), C programming, Custom model development, Activity Recognition

- Prototyped a deep learning model for tracking food and water intake from 488 recorded meals with 50,000 gestures.
- The model achieved 80% accuracy, and has been published at the IEEE Big Data 2020 International Conference.

Master's Thesis **Delft University of Technology, NL** **Jan 2016 – Jan 2017**

Medical image processing, 3D image reconstruction, Multi-model MRI images, Collaborative research, Alzheimer's diagnosis

- Researched 2 methods for normalizing 3D MRI images and automating the early diagnosis of Alzheimer's.
- Collaborated with 3 researchers, and published the findings with the TU Delft Education Repository, seen here.

Other experience

Engineering Estimator **Cal Engineering Solutions** **Jun 2021 – Oct 2021**

Engineering & Design, Cost Estimation, Project Management, ERP Software, Lean Principles

- Designed packages for maintenance or replacement of electric poles, reducing lead-time by 10%.
- Coordinated tasks between 3 ground crews and environmental agencies in remote and wilderness areas.

Co-Researcher **Maharashtra Institute of Technology** **Feb 2018 – Jul 2018**

Deep Learning Education & Research, Jupyter Notebooks, Python programming, Retail & Commerce

- Mentored 6 engineering students in the use of Python programming and Deep Learning frameworks such as TensorFlow and CNTK. Prepared slides, quizzes, and tests to evaluate their performance, and provided candid feedback.
- Developed 3 deep learning models to predict an aesthetic score for advertisements images using photography composition rules as guiding principles.

Engineer Trainee **Cognizant Technology Solutions** **Dec 2012 – Oct 2013**

IBM Mainframe & z/OS support, IT Helpdesk

- Certified in Six Sigma Yellow Belt and trained in ITIL V3 and IBM Mainframe and z/OS technology.
- Supported operations of Lloyd's Bank Plc., monitoring mainframe servers, and troubleshooting failures.
- Troubleshot nightly failure patterns by observing resource usage and fixed bugs in 3 critical jobs.