Uday Girish Maradana

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EDUCATION

National Institute of Technology, Calicut — Kerala, India
B.Tech Mechanical Engineering , GPA: 6.52/10 — *Jun.2015 – May.2019*

EXPERIENCE

Tiger Analytics — Bangalore, India
Machine Learning Engineer — *Jan 2022 - Present*

- **MLOps Pipeline Dev -Price Elasticity Model**: Leading a team of 4 ML Engineers in orchestrating and automating the training and inference pipeline deployment following MLOps principles. The current channel allows a price elasticity model to run on a Batch inference mode.
- **Anomaly Detection Pipeline - Cybersecurity**: Worked as a part of the MLOps team to develop a Real-time Scalable and Automated Pipeline for Anomaly Detection in Authentication systems.
- **Cloud IOT + ML Exploration - Internal POC**: Leading the development of a Hybrid IOT architecture for easier integration with sensors, cameras. Internal POC to show capabilities in IOT and ML Integration.

Freelance ML Engineer/Data Scientist — Remote
Machine Learning Engineer — *Aug 2021 - Jan 2022*

- **DeepJudge - Aug 2021-Jan 2022**: Worked on developing multiple components for the Information extraction platform for the Semantic search component of a Legal AI product.
- **Aays Analytics - Aug 2021- Jan 2022**: Analysed the data from a Retail Fashion Business client and built a pipeline for Automating Scheduling and managing inventory using ML Modelling.
- **Applied Computing - Sep 2021- Nov 2021**: Developed an ML-based API that can help in Virtual KYC automation with the help of Cloud Text extraction APIs, OpenCV, and NLP libraries to identify keywords.

New Space Research Technologies — Bangalore, India
Machine Learning Engineer II (CV) - Autonomous Systems Team — *Feb 2021 - Jul 2021*

- **Targeting and Navigation Platform**: Developed a Deep learning based Targeting and Navigation platform using Deep learning based feature matching algorithms such as Superpoint, LoFTR, SuperGlue.
- **Platform Shift- RPI to Jetson NX**: Led the exploration of shifting the current inference platform which is Raspberry Pi to CUDA based platforms to speed up the platform inference

Quantiphi Analytics Solutions — Bangalore, India
Machine Learning Engineer — *May 2019 - Feb 2021*

- **Solutions Research POC Team**: Worked in a team to develop firms' capability in Hybrid deployment scenarios, especially edge/cloud inference using Nvidia SDK such as Deep Stream, TLT, Clara, TFlite, and OpenVino.POC Projects include working on Television videos using google cloud AI-based APIs and analyzing the impact of characters/ sentiment in the videos with the viewership, AI-based Gym Assistant, Web Page, and Doc Translations using Google APIs and Custom approach.
- **NLP- Transformer related script development**: This project involves developing a scalable script to deploy OpenGPT-2/Roberta/Longformer in a Kubeflow-based pipeline and benchmark the model performance.
- **Computer Vision for Person Re-Identification**: CV pipeline for Re-identification and security. This project involves working on deep learning concepts such as Object Detection, Object Tracking, Person Reidentification, and Image Search using FAISS and Elastic Search.
- **Computer Vision for Safety**: CV Pipeline for Safety in Parks, Resorts, etc. This project involves working on DL concepts such as Object Detection, Tracking, and Pose Estimation and deploying them using the Triton Platform.

Storilabs System Technologies — Kerala, India
Machine Learning Intern — *Jun 2018-Oct 2018*

- **Computer Vision Pipeline for real-time Object Search**: CV Pipeline for Real-time object search is for identifying and live tracking of objects across multiple places and also tracking the history.

PUBLICATIONS

- Uday Girish, M et.al. "RIGGU: A Semi-humanoid Robot Platform for Speech and Image Recognition" in Intelligent Systems, Technologies and Applications, 2020 Paper Video.

Projects

- **Knee Arthroscopy Surgery Tool powered by CV (Ongoing)**: Using Computer vision and Traditional Image processing to get a real-world transformation of the measurement made in an Image. Using Detectron2 for Segmentation and Traditional CV + Shortest distance-based approaches for Contour Detection and matching.
- **Autonomous Bot-v1 using DL and ROS(Ongoing)**: Development of an Autonomous bot using ROS, Object Detection, Lane Detection, and path planning using Jetson Nano, RPI4 with a night vision capability.
- **Auto RC Car using Tiny ML (Ongoing)**: Integrating RC Car (1:10) with vision and sensory models and using Tiny ML for low powered micro-controllers to understand capability of edge computing.
- **Auto Ticket Generation using Real time Transcription**: Developing a Workflow that can integrate with the current Call Center AI and enable Auto ticket generation with real-time speech-to-text transcription, NLP, and entity matching.
- **Anonymization tool for Surgical Videos**: Developed a Web UI using streamlit powered by ML backend, which supports multiple model integrations to anonymize different objects in a video. This tool is deployed on a cloud with Authentication and Multi-Cloud Storage integration support.
- **Label Studio ML backend Integration - Auto Labelling**: Integrated Label Studio with ML-powered backend for Auto labeling. This solution is then deployed on Cloud for a client to enable faster labeling.
- **Multi Class Image Classification with Deployment**: Tuned different SOTA models, developed a few custom CNN architectures for Multi-class Image classification on the Cdiscount dataset(5000 categories), and deployed it on the cloud with Streamlit UI. This work is a part of the thesis coursework of PGD-AI/ML.
- **Knee Rehabilitation System**: Fabrication of a device with a 2 DOF mechanism which can be used for performing Flexo-extension exercises which can be used for Knee rehabilitation purposes.
- **RIGGU V2-The Semi Humanoid**: A complete framework for developing an Interactive Semi-Humanoid Robot using technologies like AI, NLP, ROS, and SLAM.
- **Quadcopter,Hexacopter**: Autonomous Quadcopter based on PixHawk Flight controller integrated with a Raspberry Pi. Hexacopter based on ARM and equipped with manual control and PID tuning was done for stability. This project involves the testing and performance analysis of hexacopter on PID and backstep algorithms.
- **Robocon Bot-ABU Robocon 2017**: A manual robot that can throw disks at specified positions was made by our Robotics Interest Group for National level Robotics Competition called Robocon-2017. I was involved in the development of Pneumatic thrust mechanics and control.

Programming Skills

- **Languages**: Python, C, C++, SQL, HTML, R
- **Technologies**: Cloud Computing(GCP, AWS,Azure), CV, NLP, RL, Robotics, Edge Computing, Speech Tech, Network Security, Quantum Computing, Databases, Microservices
- **Frameworks**: Tensorflow, OpenCV, Scikit-Learn, Pytorch, CUDA, cuDNN, ROS, Deepstream
- **Softwares**: Matlab, COMSOL,SolidWorks, Ansys,FluidSim, CREO, MasterCam, Proteus, Unity, Blender
- **OpenSource**: Octave, Arduino, Edge Devices, GitHub, Jenkins, ARM, Gazebo, OpenAI Gym

Certifications/Courses

- **Coursera**: Machine Learning by Andrew Ng, Deep Learning Specialisation, Tensorflow Data, and Deployment Specialization, Preparing for GCP ML Specialization, Reinforcement learning-Univ.of Alberta(Ongoing), Robotics Specialization-Upenn (Ongoing)
- **CloudTech**: GCP Professional ML Engineer, AWS ML Speciality, GCP Cloud Associate Engineer, AWS Associate Solutions Architect
- **Electives/Courses**: Control Systems, Introduction to Robotics, Image Processing, Dynamics, Neural networks and Genetic algorithms
- **Others**: Nvidia Data science with RAPIDS, Introduction to Quantum Computing Diploma(Qubit by Qubit), Global Quantum computing workshop - QBronze, QSilver (Qworld), Quantum Machine Learning Summer school (IBM), Introduction to Computational Neuroscience(Neuromatch), Advanced DSA & System Design - Tutort Academy, ThinkAutonomous.ai - OpticalFlow, Stereo Vision, Neural Optimization
- **Udacity**: Introduction to AWS ML, Introduction to Nutanix Cloud, Self Driving Engineer Nanodegree(Ongoing),Robotics Software Engineer Nanodegree(Ongoing).
- **Distance Learning**: PG Diploma in AI and ML (University of Hyderabad), ASU CareerCatalyst (Ongoing)-Operating Systems, Computer Organization, Principles of Programming Languages