LAKSHMANA RAO KANAKALA

Machine learning Engineer

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SUMMARY

Experienced machine learning engineer with five years of expertise in Machine learning,computer vision and deep learning. Proven track record of solving complex problems in text like transformers,LLM, image and video analysis like object detection, and classification.A passionate problem solver with a dedication to staying at the forefront of AI technology. Ready to contribute expertise to advance projects and drive business success in the field of machine learning and computer vision.

PROFESSIONAL EXPERIENCE

Machine Learning Engineer

Phenom

📅 10/2021 - Present 📍 Hyderabad, India

- LLM: Adapting the **llama-2** through fine-tuning for domain-specific tasks in the **HR domain**. Training a language model with **7 billion** parameters using distributed training methods along with advanced training optimization strategies
- Fine-tuned a **mini-BERT** model on **Masked Language Modeling** task, containing millions of job descriptions, resulting in an embedding model with a heightened contextual grasp within the **HR domain**.
- Developed ML models for **profile matching** to enrich the data in company database with the accuracy **82%**.
- Implemented **Custom NER** model that parses job and detects & extracts titles, skills, location, school & so on from Job Description.
- Deployed ML applications on the cloud using **AWS**, **docker** and **kubernetes** cluster and model monitoring and registry using **MLFlow**. successfully implemented **CI/CD** pipelines for APIs.

Computer Vision Engineer

SensoVision Systems

📅 11/2020 - 10/2021 📍 Bangalore, India

- Trained **UNET** for gear parts(**20** damages) on **NVIDIA GPU**. Got pixel accuracy of **92.4%**, achieved 73fps with fp16 precision by using **TernsorRT** runtime
- Developed various the Computer vision algorithms for **screw damage detection** and embedded in **Screw sorting Machines.**
- Developed **CV algorithms** using **C++**, achieved **80fps**, and Installed **5** new screw sorting machines at the client's place.

Associate Engineer in Computer Vision

Cognitive Machines

📅 02/2019 - 02/2020 📍 Bangalore, India

- Delivered **Flask** API of **Floor visualiser** for **Floord** client.
- Implemented **YOLO object detector** for object detection(**20k** images) and localization in underwater images and achieved **80%** accuracy
- Developed algorithms to detect **tables** in the document using **OpenCV** structural elements and achived **75%** accuracy in controlled environment
- Fine tuned Object detection deep neural networks like **YOLO**, **SSD** and **Faster RCNN,** also implemented segmentation networks like **DeepLab** and **PSPnet**.
- Implemented a few **OpenCV** filters and functionalities in the internal tool in C++ and that resulted in **1.5x** reduction in memory consumption.

SKILLS

Technical skills

Python · C/C++ · Machine Learning · OpenCV · TensorFlow · Keras · NLP · OpenVino · Deep Learning · PyTorch · MLOps · LLM · Flask · Data Science · MongoDB · LangChain · AWS · Git · Jenkins · ArgoCD · Numpy · Linux · Kubernetes · Scikit-Learn · Pandas · CUDA · Docker · TensorRT · CNN

PROJECTS

ES query generation

- Developed **prompt engineering** for **ES query** generation using **LangChain** and interfaced using **stream lit**.

Profiles Matching

- Enriched the profiles using **similarity scores** and ML models **randomforest**, **XGboost**. Delivered 3 models with realtime **recall 82**%.

Floor visualiser

- Fine tuned **Deeplab-V3** and segmented floors with **90%** pixel accuracy. visualised new tiles using **perceptive transformations** and **openCV** filters

Autonomous driving vehicle

- Implemented pedestrian detection using **HOG** descriptor. And number plate detection using **EAST** and **tesseract**. Designed prototype for real time implementation

Image similarity search

- Developed image recommendation system using **Auto encoders**. Given a image, able to show **similar images**.

EDUCATION

Bachelor of Technology, ECE

AP IIIT, RGUKT-RK Valley

📅 08/2015 - 05/2019

GPA

8.46 / 10

Pre-University Course

AP IIIT, RGUKT-RK Valley

📅 08/2013 - 05/2015

GPA

9.22 / 10

Secondary School Certificate

Government High School,Kothapeta

📅 06/2012 - 04/2013

GPA

9.80 / 10

PROJECTS

Snake bot

- Designed robot which can move without wheels on any terrain. Developed using **Arduino** and **servo motors**

ACHIEVEMENTS

career achievements

* Successfully deployed Profile matching API, which can handle **million requests per minute** and replaced the **PeoplesLab** paid service.
* Developed **HR domain** specific **BERT** model.
* Autonomous Driving Vehicle Stood in **top 35** projects in **KPIT sparkle** 2018,Pune.
* **Runner up** in Open Innovation **Hackathon** on Building Smart villages by **UC Berkeley -Andhra** at KL University.
* Got **1st** prize for **Snake bot** in **Abhiyanth 2k'17** fest.