Kotiya Mohith Goud

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SUMMARY

Machine Learning and Full-Stack Development enthusiast with one year of experience in building and deploying ML models using **Python**, **TensorFlow**, and Flask, as well as developing scalable web applications with **React**, Node.js, and PostgreSQL. Passionate about leveraging AI and software development to solve real-world challenges.

EXPERIENCE

IIIT Hyderabad (IHub-Data) Sep 2024 - Present
AI Research Intern (Full-Time) Hyderabad, India

- Developing a novel **Vision Mamba** with PointNet++ on RGB-D input for grasp point detection in prosthetic robotic arms, achieving **55%** AP on 1.2K test images compared to the **SOTA model**.
- Developed a fine-tuned Segment Anything Model (**SAM**) for detecting eye palpebra images using **LoRA-based adaptation** from the PEFT library, achieving an IoU of **70%** without promt for **AIG** Hospital.
- Worked on brain tumor segmentation and classification using the **RSNA 2021 dataset** to predict whole tumor presence, enhance tumor characteristics, and estimate MGMT status.
- Used a **DenseNet121** backbone model with **Unet++** as base architecture, for preprocessing a 3D dataset, achieving an IOU of **71%** and a Dice loss of **0.19**

Webiosis System May - Sep 2024
Full-stack Developer Intern (Full-Time) Hyderabad, India

- Built an ERP system with a microservices architecture, supporting **1,000+ users** and reducing response time by **20**%.
- Integrated payment processing with Prisma for database operations and Postman for API testing, achieving an average response time of **300 ms**.
- Implemented **token-based authentication** for secure backend operations.

PROJECTS

Robo Grasp with CNN Source Code
Tools Used: Python, pytorch, Pointnet++, Vision Mamba, MLP, CNN

- Developed a novel grasp detection approach integrating **Vision Mamba** and attention mechanisms, enhancing performance on unseen objects.
- Optimized multi-GPU training using **Distributed Data Parallel** (DDP) across four RTX 3090 GPUs, reducing memory usage to 40GB.
- Improved grasp detection **Average Precision (AP) by 3-4%**, enhancing generalization across diverse grasping scenarios.

Ema Chatbot Source Code, Live model
Tools Used: Python, Together AI API, Streamlit, RAG

- Designed and deployed an advanced chatbot system using **RAG** architecture, integrating **LLaMA3-70B-Chatbot-HF** and **Mistral-7B-Instruct-v0.2** through the **Together AI API** for accurate and context-aware conversational responses.
- Implemented sentence embeddings with **all-MiniLM-L6-v2**, generating 384-dimensional dense vectors that significantly improved retrieval efficiency and enhanced the chatbot's ability to deliver relevant answers.
- Optimized the system by leveraging **LangChain**, resulting in a streamlined retrieval and generation pipeline and achieving a **75%** improvement in execution speed.

Fram Wise Source Code, Live model

Tools Used: Transformers, Fine-tuning, Streamlit, Docker

- Fine-tuned **ViT-Swinv2-large-patch4** from HuggingFace on a custom image dataset.
- Achieved **0.06%** Loss after Finetuning all layer while 0.1% using **LoRA fine-tuning**.
- Deployed the **Streamlit** app via **Google Cloud Run**, pulling Docker images from **Google Container Registry** and **HuggingFace Spaces**.
- Implemented CI/CD pipelines for automated deployment and scaling.

EDUCATION

Anurag University Aug, 2020 – May, 2024
Bachelor of Technology, CGPA - 8.11/10 Hyderabad, India

Narayana College Aug, 2018 – March, 2020
MPC, CGPA - 8.6/10 Hyderabad, India

Technologies

Languages: Python, JavaScript

Frontend & Backend: HTML, CSS, JavaScript, React JS, Flask Express, TypeScript, Node.js, API

Data Science & ML: NumPy, Pandas, Scikit-learn, Matplotlib, TensorFlow, PyTorch

DL & Model Optimization: PEFT, LoRA Fine-Tuning, Quantization (QURA), YOLO, OpenCV

Deep Learning Domains: Computer Vision (CNN), Natural Language Processing (NLP), Large Language Models (LLM)

DevOps: Docker, GitHub Actions, Bitbucket, Google Cloud Platform (GCP)

ACHIEVEMENTS AND CERTIFICATES

- **Won** at Institute Level in **Solving for India Hackathon** conducted by **Google Cloud** and **AMD**.
- **AWS Academy Machine Learning Foundations** Issued by **AWS Academy** View Certificate
- Participated in **VIITOR CODE COMPETION** organized by APJ Abdul kalam Hackers Academy.
- Attended a **Drive Into Automation Workshop** conducted by **MALAI** Club.

INTERESTS

- Machine Learning
- Chess
- Books

EXTRACURRICULAR ACTIVITY

- Organized a **National level Techno-Cultural Fest Project Expo** at Anurag University.
- Conducted many Events as CAD club Vice-president at **University level** with **25+ teams**.
- Placed at **Top 10** in University Level Chess competition.