

VAISHNAV POTLAPALLI

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Education

New York University Courant Institute of Mathematical Sciences

Sep. 2023 – Dec 2024

Masters of Science in Computing, Entrepreneurship and Innovation GPA: 4.0/4.0

New York City, NY

Relevant Courses: LLVMs, Big Data and ML Systems, Foundations of Computer Networks

Mahindra Ecole Centrale

Aug.2016 – May 2020

Bachelor in Technology in Computer Science

Hyderabad,Telangana

Relevant Courses: Deep Learning, Distributed Systems, NLP, Database Systems

Experience

MBZUAI

July 2022 – July 2023

Research Assitant - Computer Vision (Advisor: Dr. Salman Khan)

Abu Dhabi, UAE

- Proposed and implemented a novel Visual transformer based prompt-learning framework for All-in-one blind Image Restoration / Enhancement called **PromptIR**,which achieved **SoTA** performance improving over previous methods by **0.9 dB** on dehazing, deraining and denoising benchmarks.Work presented as part of **Neurips 2023**
- Adapted computer vision based continual learning techniques **L2P**, **DualPrompt** methods for video action recognition improving performance over previous techniques by over **10%** accuracy and **14% BWF**, on several public benchmarks.
- Studied parameter-efficient finetuning techniques to improve downstream performance of **Multimodel LLM models**.

Dhan AI

April 2020 – April 2022

Machine learning Engineer

Hyderabad, India

- Developed an ensemble of **BERT-based Classifiers** to enhance the NER engine, resulting in a **12% accuracy** improvement in internal benchmarks on entity recognition and sentiment classification, significantly improving the primary product of the company, which was a Patient Life Cycle Managment Chatbot.
- Optimized model serving API using **Nvidia TensorRT**, increasing the model throughput by **25%**, enabling close to realtime performance for the chatbot, across the customer organization.
- Rewrote the application testing pipeline to utilize increased **parallelism and Redis cache** to reduce CI/CD time by **60%** that enabled rapid development of new features.
- Led the development ETL pipelines to efficiently collect and process data for the analysis of customer responses using **MSSQL SSIS**.
- Shipped the first the product of the company, to the customers and conducted user interviews to gather feedback on the product

Projects

ROBOMUSE- Mobile robot platform | ROS, OpenCV, PyTorch, C++, Python

September 2019 – January 2020

- Developed an autonomous robot's vision system, implementing **stereo calibration algorithms** with custom stereo cameras for depth imaging. Optimized **YOLO** and **SSD** for advanced object recognition in **RGBD** images.

PhysioLive: Virtual Assistant for Physio Therapy | Django, Tensorflow, C++, Python

May 2018 – August 2018

- Created an app leveraging human pose estimation and anomaly detection with **CMU Openpose** to correct patient postures in physiotherapy. Developed the backend with Django. Secured **1st place** among 34 teams at the Novartis MedTech Hackathon

Publications

PromptIR: Prompting for All-in-One Blind Image Restoration

NeurIPS 2023

Vaishnav Potlapalli, Syed Waqas Zamir, Salman Khan, Fahad Shahbaz Khan

Sketch3T: Test-Time Training for Zero-Shot SBIR

CVPR 2022

Aneeshan Sain, Ayan Kumar Bhunia, Vaishnav Potlapalli, Pinaki Nath Chowdhury, Tao Xiang, Yi-Zhe Song

MediTables IIIT

GREC 2021

Akshay Praveen Deshpande, Vaishnav Potlapalli,Ravi Kiran Sarvadevabhatla

Technical Skills

Computer Vision: OpenCV, SLAM, Object Detection, Semantic Segmentation, Image Restoration, GAN, VAE, CNN, ViT

Languages: Python, Java, C/C++, CUDA,HTML/CSS, JavaScript, TypeScript,SQL

Developer Tools: Git/Github,VS Code, Azure Cloud, WandB

Technologies/Frameworks: Pytorch, Tensorflow,Transformers,TensorRT, ,OpenCV, Numpy, SciPy,Django, Docker, MySQL