NARENDRA MALL

+91-9559263059 • narendramall.iitkgp@gmail.com • linkedin.com/in/narendra-mall

EDUCATION

Indian Institute of Technology, Kharagpur May 2021
B.Tech(Hons.) Chemical Engineering 8.14 / 10.0 GPA

PROFESSIONAL EXPERIENCE

Machine Learning Engineer | Metadome.ai, Bangalore May 2021 - Present
Virtual Try-On [VTO]

- Trained an ML model for real-time ear **keypoint detection** on edge devices using **MobileNet-v3 arch.** with **MAE 1.2**
- Decreased **8X** delivery time of VTO web app. by designing and building an **SDK** to track the keypoints on the face
- Developed a face smoothening filter using **Bilateral Filter Algorithm** which can run on web with more than **45 FPS**
- Built Specs Recommender by measuring Face-width (**error < 3%**) and calculating face shape using phone's camera
- Trained a **Segmentation model** for wrinkle segmentation used in skin care app with an accuracy of more than **99%**
- Enhanced user experience of the VTO app. by stabilising real-time face landmarks pts. of face using **One Euro Filter**

Home Decor

- Developed and deployed API for home interior's **style transfe**r utilizing SD1.5 and **M-LSD ControlNet** using Diffusers
- Created and deployed API for **text-guided Image Inpainting** with **Diffusion Models** using **FastAPI** for Home Decor

Avatar Creation(Selfie to Avatar) and Immersive Chatbot

- Trained **image classifications model** to classify a person's characteristics i.e hair and beard type, glasses, gender
- Developed and deployed a **face texture extraction algorithm** which extracts face texture from a given selfie image
- Created a **RAG** based immersive chatbot using **lang-chain** which helps the user understand the product better
- Added functionality in the Auto configurator where the user can control interaction based on chat or voice input

Machine Learning Intern | Siemens Industry Software Pvt. Ltd., Bangalore Apr 2020 – Aug 2020
Project Title: Digitization of the complex Engineering Drawings using Computer Vision and Deep Learning methods

- Applied the **Connected Component Algorithm** to separate texts and noise from given engineering drawings image
- Identified and removed connecting wires using **Hough Line Transform** Algorithm and a length threshold respectively.
- Localized symbols in images through **Contour Detection** and merged nearby contours based on proximity distance
- Developed a robust CNN model with **ResNet-50 arch.** to classify **140 symbol classes**, achieving **97% accuracy**.
- Generated a NetworkX graph (in XML format) based on the connection information for the aid of visualization

PROJECTS

Lung Cancer Detection Dec 2019 – Jan 2020
Principal Instructor: Prof Pranab Kumar Dutta, Electrical Engineering, IIT Kharagpur

- Trained a **CNN model** to predict whether a preprocess CT scan image of a lungs is having malignant or benign nature
- Used **Otsu's algorithm** to perform image segmentation on CT scan images of lungs to extract **RoI** from the image.
- Improved classification performance of model from an accuracy of **65%** to **89%** by transfer learning using **VGG arch.**

SKILLS AND EXPERTISE

Programming Languages: Python, JavaScript, Typescript, C, C++
Libraries/Frameworks: OpenCV, Keras, Tensorflow, PyTorch, Numpy, Pandas, Sklearn, Matplotlib, Transformers
Software/Tools/Cloud Computing: Linux, VSCode, Git, Nano, Unreal Engine, Docker, Google Cloud Platform

RELEVANT COURSEWORK

Design and Analysis of Algorithms | Programming and Data Structures[C++] | AI Foundations and Applications |Real World case studies for ML (Eduonix) | Machine Learning(Coursera) | Machine Learning A-Z Hands-on Python(Udemy)

EXTRA CURRICULAR ACTIVITY

- **Won Silver in General Championship Sports** as a part of the Hockey team of Meghnad Saha Hall of Residence
- Awarded by NSS IIT Kharagpur for being the **Best Volunteer** in my unit in the group more than 80 people
- Led an 83-member student team as **NSS leader**, coordinating sub-teams for teaching, medical etc. issues surveys.