Mathan Prasanna Kumar

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Education

Government College of Engineering, Salem,Tamil Nadu. Graduation : 2022

Bachelor of Engineering in Civil Engineering CGPA :8.40/10

Skills

Languages: C++, Python, JavaScript, HTML, CSS

Technologies:

Tensorflow,Opencv,TensorRT,CMake,TFlite Langchain,Nodejs,Express.js,Flask,Git,PostgreSQL

Projects

SRGAN (github.com/srgan)

- A generator model implemented in TensorFlow that super resolve the low-resolution image.
- SRRESNET is initially trained with MSE optimization and then GAN training is done with perceptual loss optimization and Upscaling of the feature maps is done by Subpixel blocks.
- COCO dataset is used for training and Generator is trained for 1million steps in the SRRESNET training and 200k steps during GAN training
- Eventually, Generator produced amazing results with 0.61 SSIM and 23.877 PSNR on the test dataset.

Face Recognition System (github.com/facewebapp)

- Similar to attendance recognition system, users can punch in and out their attendance by verifying their face.
- User data is not stored inside the database ,only the embedding of the user image is stored which is more secure and the user data can never be mishandled.
- Using FaceNet model embedding of the image to be recognized is generated and verified against the reference image embedding.
- Similarity of both input embedding and reference image embedding is measured using cosine similarity distance

MNIST Handwritten Recognition (github.com/mnist)

- Implemented a CNN model which will recognize the handwritten digits with an accuracy of 99.67%
- Sequential model structure is followed for the layers architecture and Batch normalization is applied after each layer.
- For Evaluation K fold cross validation used and followed by the Categorical cross entropy loss.

Activities

- Solved 500+ problems in Geeks For Geeks. (gfg/mathan)
- Built a Portfolio Website using HTML and CSS.
- Built a Face detector using VGG16 combined with custom model. (github.com/detector)

Experience

Vision Systems Developer Intern @RobotoAI Technologies (Sep 2023 – Present)

- Developed and trained object recognition model on a 5mm chip supporting the automation of conveyor systems.
- Accelerated model inference on the Jetson Nano using TensorRT, achieving real-time performance with 20ms latency and 60 FPS.
- Worked on the Vision based Mobile-Robot localization and SLAM research , eliminating the dependency on expensive LIDAR technology for robot navigation.

Data Science Intern @Exposys Datalabs (Sep 2023 – Oct 2023)

- Learned Machine learning algorithms and Data analysis techniques. Employed Visualization and Statistical analysis to get insights from the dataset. Applied Machine Learning methodologies to predict the Profit given the expenditure data of companies.