NIVED P A

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EXPERIENCE

Google Summer of Code Student Developer - TensorFlow

Working on TensorFlow-GAN library (Project Repository)

May 2021 – August 2021 Online

- Mentors: **Margaret Maynard Reid** and **Joel Shor**
- Trained and evaluated various state-of-the-art GAN models such as ESRGAN & ControlGAN using TF-GAN, and added them as examples to the library.
- Writing E2E Colab notebooks for training and evaluating GAN models such as ESRGAN (Super Resolution) and ControlGAN (Text-to-Image Translation) for demonstrating different functionalities of TF-GAN.

Eastern European Machine Learning Summer School

EEML (Certificate Link)

7-15 July 2021 Virtual Budapest Hungary

- Selected for attending a week long summer school that covered various topics in the field of AI, ranging from the basics of machine learning theory to active research areas such as Transformers and Generative models.
- Lectures and coding tutorials were taken by researchers and engineers from top organizations such as DeepMind or Google and various universities.
- The main objective of the school was to promote the growth of research in this field, and as a result the process of conducting good research in the field of AI and various good research practices were also heavily discussed.

PUBLICATIONS

Cost Effective Device for Autonomous Monitoring of the Vitals for COVID-19 Asymptomatic Patients in Home Isolation Treatment

COCONet'20 Conference - Springer Journal Link

October 2020 Virtual

TECHNICAL SKILLS

- Strong coding and technical skill in **Python**
- Strong understanding of Deep Learning concepts including **CNNs**, **Transformer models** & **Generative models**.
- Familiar with ML/DL frameworks such as **TensorFlow & PyTorch**
- Basic programming skill in **MATLAB**, **Java** & **C++**
- Familiar with libraries such as **OpenCV, NumPy, Pandas, PIL, Matplotlib**
- Familiar with **Google Cloud Platform** for training models.
- Familiar with technical tools such as **Jupyter notebook, Git & Github, LaTeX**
- Familiar with **Linux & Windows operating systems.**

EDUCATION

B.Tech in *Computer Science & Engineering - 8.51/10*

Amrita Vishwa Vidyapeetham

2019 – Present Kollam, India

Higher Secondary - *87%*

Vidyodaya High School

2017 - 2019 Kochi, India

Secondary - *9.4/10*

Rajashree S.M.M School

2017 Kochi, India

PROJECTS

Image-to-Image translation

- Implemented the CycleGAN model and improved the model performance by using VGG based perceptual loss function and also reduced the training time by a considerable amount by using a single discriminator network instead of two as proposed in the original paper. The model was also trained on a custom dataset created by using web-scraped images. [Blog]

Single Image Super Resolution

- Implementing the SRGAN model for Single Image Super Resolution and improved the model by using a modified loss function. [Blog]

Kaggle Competition - Making Art using GANs

- Used CycleGAN model for translating digital photos to Monet paintings. Secured 4th place at the time of submission function. [Blog]

Attention Neural Networks for Image Classification

- Concept of Attention is popular in the field of NLP but can be as beneficial in the field of Computer Vision. The attention blocks were used along with a convolutional neural networks for performing image classification on CIFAR-10 dataset. [Blog]

Image Classification using Siamese Network

- Siamese Networks are used for one shot learning for tasks such as signature/face verification. The network was modified to perform binary classification for detecting malaria infected cell images. [Blog]

Twitter Data Analysis

- Implemented a transformer network to predict the reliability of COVID related tweets. Model was trained on a dataset created using Twitter API. A LSTM based model was also used on the Twitter dataset for performing sentiment analysis. [Blog]