Shanmukha Vellamcheti

I'm a self-motivated, hardworking Artificial General Intelligence believer, seeking to develop something that has impact all over the globe by contributing to an esteemed organization.

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EDUCATION

NIT Raipur
B.Tech, CSE

August 2016 – June 2020
Raipur, India

I did my undergraduation at National Institute Of Technology(NIT) Raipur in BTech Computer Science and Engineering(CSE) and graduated with a CGPA of 9.09/10 in 2020.

INTERNSHIP

Computer Vision intern
Omnipresent RobotTech

July 2020 – Current
Currently Remote

Working on real time deployment of Social distancing & mask monitoring S/W. I helped the team in optimizing the performance of DNN models, ensuring scalability of the no. of parallel CCTV streams that can be processed, thereby cutting the deployment cost. I also ported an exisiting Tensorflow model to Pytorch model. We used *Pytorch, Tensorflow, OpenCV, Sklearn, Matplotlib*.

INTERNSHIP

Deep Learning intern
Optum Global Solutions (UHG)

May 2019 – July 2019
Gurgaon, India

I prepared a POC and added a Machine Learning feature to the Medical Benefit Management System(MBMS) by analyzing a large-scale database. I had to deal with and understand a large scale database conatining medical jargon in order to extract the features efficiently. I used *Tensorflow, Sklearn, Numpy, Pandas, Matplotlib*.

INTERNSHIP

Computer Vision intern
Pucho Technologies

Septemeber 2018 – December 2018
Remote Internship

Dealt with Multilingual OCR as part of Computer Vision team and implemented a NN model for Devanagari script. As this was a research internship, I had to perform a lot of literature survey in order to combine and use various benchmark architectures on this topic to obtain best possible results. I used *Tensorflow, OpenCV, Numpy, Matplotlib*.

PUBLICATIONS

- Class Imbalance Deep Learning for Bankruptcy Prediction (Published)
  Shanmukha Vellamcheti, Pradeep Singh. First International Conference on Power, Control and Computing Technologies**(IEEE ICPC2T 2020)**.
- **Aspect Based Sentiment Analysis using ELMo and Coattention** (Draft)
  Shanmukha Vellamcheti, Karthik Reddy, Manu Vardhan.
  .

PROJECT

Trained a Reinforcement Learning agent on Mountain Car environment
Trained an agent in a way that mountain car can navigate itself to the destination by altering velocity and position. Q-learning algorithm was used and environment was taken from OpenAI's gym.
Data: OpenAI Gym
Algorithm: Q-Learning
Major tool(s): *Numpy, Matplotlib*
Project link

PROJECT

Face Mask Detector
Trained RetinaNet with ResNet-50 as backbone using Wobot intelligence's face mask dataset on kaggle. Though the amount of training time was limited by GPU hours on kaggle kernels, the detection of boxes on the test set was impressive.
Data: Wobot intelligence face mask data
Algorithm: RetinaNet, ResNet-50
Major tool(s): *Pytorch, OpenCV, Numpy, Matplotlib, Pandas*
Project link

PROJECT

Federated Learning for Sentiment Analysis using Neural Networks
As a part of Minor Project we tried to integrate two different research fields namely Federated Learning and Sentiment Analysis.
Data: modified from sentiment140.
Algorithm: BiLSTM, ELMO, Federated averaging
Major tool(s): *Tensorflow, Keras, Tensorflow-federated, NLTK, Numpy, Pandas*
Project link

OTHER PROJECTS

- **Bankruptcy Prediction using Deep Learning:** We present a way to tackle class imbalance problem in Neural Networks by using sampling techniques like SMOTE. Link
- **Aspect Based Sentiment Analysis using CoAttention:** Developed a novel NN architecture with CoAttention mechanism at it's core in order to tackle the problem of ABSA.
- **Speech-To-Text converter:** This project makes use of NLP and RNN to convert speech input into text output based on Deep Speech.

SKILLS

- **Languages:** Python, C, C++
- **Libraries:** Pytorch, Tensorflow, OpenCV, NLTK, OpenAI Gym, Sklearn, Numpy, Pandas, Matplotlib, Flask, Git
- **Fields:** Computer Vision, Natural Language Processing, Reinforcement Learning, Machine & Deep Learning.
- **Environments:** Linux, Windows
- **Beginner level:** Android, Django, SQL

ACHIEVEMENTS

- One of the finalists in the Optum Global Hackathon. We developed a chatbot which helps depressed people.
- One of the 5 finalists out of 106 teams in a Government hackathon (SKY hack). We developed a chatbot for analyzing the symptoms of differently abled children.
- We worked on developing a License Plate Detection app in Hack in The North at IIIT Allahabad – one of the largest student organized hackathon in India.
- Successfully cleared 1st level of Junior Science Olympiad(JSO) - a National wide olympiad.

GIVING BACK

- Was an active Member of Research and Development Team of Association of Computer Engineers (ACE), Raipur, India where we organized conferences and workshops on latest technologies and trends
- Was member of Unnat Bharat Abhiyaan, which is a government initiative for social cause to help the development of rural areas.