Aarya Patel

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Objective

To pursue graduate studies in computer science and engineering, leading to a career in research.Interested in Computer Vision and Deep Learning.

Education

Year	Degree	Institute	Percentage/CGPA
2016 - present	B.Tech in Computer Science engineering	Jaypee Institute of Information Technology,Noida	CGPA - 8.0
2016	Class XII CBSE	DPS Greater Noida	Percentage - 90%
2014	Class X CBSE	DPS Greater Noida	CGPA - 10.0

Projects

- **Trigger Word Detection(Deep Learning course project) :** In this assignment, I constructed a speech dataset and implemented an algorithm for trigger word detection (sometimes also called keyword detection, or wake word detection). Trigger word detection is the technology that allows devices like Amazon Alexa, Google Home, Apple Siri, and Baidu DuerOS to wake up upon hearing a certain word.
- **Car detection for Autonomous Driving(Deep Learning course project) :** I learnt about object detection using the very powerful YOLO model. Dealt with bounding box,non max suppression,intersection over union,powerful CNN architecture.
- **Neural Machine Translation(Deep Learning course project) :** I built a Neural Machine Translation (NMT) model to translate human readable dates ("25th of

June, 2009") into machine readable dates ("2009-06-25"). I did this using an attention model, one of the most sophisticated sequence to sequence models.

- **Face Recognition(Deep Learning course project) :** FaceNet learns a neural network that encodes a face image into a vector of 128 numbers. By comparing two such vectors, you can then determine if two pictures are of the same person.Implemented the triplet loss function.Use a pretrained model(GoogleNet) to map face images into 128-dimensional encodings.Used a siamese network to find the mapping between the two images.
- **Neural Style Transfer(Deep Learning course project) :** It merges two images, namely, a "content" image (C) and a "style" image (S), to create a "generated" image (G). The generated image G combines the "content" of the image C with the "style" of image S. I used a previously trained convolutional network(VGG-19).The idea of using a network trained on a different task and applying it to a new task is called transfer learning.This model has already been trained on the very large ImageNet database, and thus has learned to recognize a variety of low level features (at the earlier layers) and high level features (at the deeper layers).
- **Jazz Improvisation with LSTM(Deep Learning course project) :** Implemented a model that uses LSTM to generate music. The implementation took significant inspiration from deepjazz(github repo).
- **Residual Network(ResNet)(Deep Learning course project) :** Used ResNet to overcome the vanishing gradient descent problem in Deep Neural Networks.Used it in SIGNS dataset to get a test accuracy of 93.3%.
- **Character level Language Model(Deep Learning course project) :** Learnt how to store text data for processing using an RNN,how to synthesize data by sampling predictions at each time step and passing it to the next RNN-cell unit,how to build a character-level text generation using recurrent neural network.
- **Emojify(Deep Learning course project) :** I implemented a model which inputs a sentence and finds the most appropriate emoji to be used with this sentence .Used LSTM and Word Embedding.

I have completed the Deep Learning Specialization on Coursera.The implementation of above projects can be found on my github(https://github.com/aaryapatel007/Deep-Learning) .More Deep Learning related projects too are uploaded in Deep Learning Repository.

Courses

- **Computer Science :** Deep Learning Specialization(Coursera),Operating System(ongoing),Algorithm Design and Problem Solving(ongoing),Fuzzy logic and Neural Network(ongoing),Data Structures,Computer Architecture and Organization,Web and

Database Management,Theoretical Foundations of Computer Science,Software Development Fundamentals

- **Mathematics :** Graph Theory ,Probability and Random Process(ongoing), Differential Equations, Linear Algebra, Matrix Theory.

Computer Skills

- **Programming Languages :** C/C++,Python,MySQL,PHP,JavaScript,Assembly programming
- **Programming Frameworks :** Tensorflow,Keras
- **Platforms:** Windows and Linux