Jinesh Mehta

+91-7795121414 jinesh@jineshmehta.com www.jineshmehta.com mehtajineshs

Publications

(HCA-DBSCAN) HyperCube based Accelerated Density Based Spatial Clustering for Applications with Noise | *NeurIPS Workshop 2019*

- Innovated a novel grid-based clustering algorithm which reduces the number of comparison for forming cluster exponentially resulting in an overall time complexity of $n^{3/2}$ better than n^2 complexity of traditional DBSCAN algorithm.
- Acquired a significant computational speed up-to 58% over other improvements of DBSCAN algorithm while maintaining 100% accuracy.

Face Detection and Tagging Using Deep Learning | *International Conference on Computer, Communication and Signal Processing (ICCCSP) 2018*

- Engineered the concept of Multi-view Face Detection and Tagging using Convolutional Neural Networks (CNN) - identify faces from a image and provide labels to the detected faces using Tensor-flow framework and Caffe library.
- Acquired an overall accuracy of 85% for facial recognition.

Pothole Detection and Analysis System (PoDAS) for Real Time Data Using Sensor Networks | *Journal of Engineering and Applied Sciences 2017*

- Constructed a low-cost wireless sensor based end-to-end system using Ultrasonic sensors, Arduino Uno R3, GPS module, Gyroscope and Accelerometer. Using this system, location of detected potholes was notified to the appropriate government bodies.

Projects

Classify Dog Breeds using CNNs [Python • TensorFlow • OpenCV • CNN • CSS • PHP]

- Modelled a dog breed classifier using Convolutional Neural Networks which will accept any user-supplied image as input and if a dog is detected in the image, it will provide an estimate of the dog's breed. If a human is detected, it will provide an estimate of the dog breed that is most resembling.
- Incorporated OpenCV's implementation of Haar feature-based cascade classifiers to detect human faces in images.
- Trained a CNN to Classify Dog Breeds (via transfer learning) - use a pre-trained VGG-16 model to detect dogs in images & then use transfer learning using same data loaders to create a CNN that can identify dog breed.

Sentiment Analysis [Python • PyTorch • AWS • PHP • HTML]

- Engineered a very simple web page in which a user can submit a movie review and the prediction model behind the scenes will predict whether it is Positive or Negative review.
- The prediction model is implemented using PyTorch framework and trained on IMDB dataset.
- Deployed a end-to-end application - uploading your train or test feature data to AWS S3 followed by defining a classification model and a training script, training our model and deploy it using SageMaker, and lastly evaluate our deployed classifier for positive and negative reviews.

Plagiarism Detection [Python • Tensorflow • AWS • PHP • HTML]

- Developed a plagiarism detector that examines a text file and performs binary classification; labeling that file as either plagiarized or not, depending on how similar that text file is to a provided source text.
- Computed similarity features that measure how similar a given text file is as compared to an original source text; These computed features are also called containment and longest common sub-sequence.
- Deployed a end-to-end application - uploading your train or test feature data to AWS S3 followed by defining a binary classification model and a training script, training our model and deploy it using SageMaker, and lastly evaluate our deployed classifier.

Skills

- **Languages**
  Python • C++ • C
- **Frameworks & Platforms**
  Tensorflow • Scikit-Learn • Caffe • AWS • Qt

Education

Machine Learning Engineer Nanodegree - Udacity

- Duration: **4 months** • Year: **2019**

B.Tech. in Computer and Communication Engineering - Manipal Institute Of Technology

- Cumulative GPA : **8.37 / 10.0** • Year: **2013 - 2017**

Experience

Senior Software Engineer II - Honeywell Technology Solutions Lab

Oct 2019 - Present

- Understanding and procuring simulation and analytical tools used in engineering aircraft engines focused on turbines, compressors and fans.

Software Engineer - Honeywell Technology Solutions Lab

July 2017 - Sept 2019

- Designed simulation and analytical tools used in engineering aircraft engines focused on turbines, compressors and fans.
- **Key achievements** :
  - Remodeled four aerospace analytical tools to optimize and remove ambiguity, resulting an additional annual productivity savings of **$1,000,000** for Honeywell Aerospace.
  - Replaced existing deployment framework with Wix (Open Source framework) for aerospace tools, reducing enterprise software license costs of **$500,000**.

Scientific Staff - Center for Artificial and Machine Intelligence (CAMI)

Oct 2015 – June 2017

- Engineered deep learning algorithms used for recognizing fraud detection and clustering algorithms for weather predictions and earthquake study.
- **Key achievements** :
  - Collaborated with three research scholars to produce two research papers namely : **'Face Detection and Tagging Using Deep Learning '** & **'HyperCube based Accelerated Density Based Spatial Clustering for Applications with Noise '**.

Software Intern - Fracktal Works Pvt. Ltd

June 2016 – July 2016

- Developed desktop applications as the part of the software team.
- **Key achievements** :
  - Designed a desktop-based application, **'Fracktory 2.0 '**, using wxPython framework which allows clients to assign print jobs to 3D printers remotely and check printer status in real-time.