

Jinesh Mehta

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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, Gyro-scope 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.

Analyze Movie Reviews using 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.

Text Document 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.