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# AJIT V PUTHENPUTHUSSERY

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## EXPERIENCE

**Teaching Assistant** **New Jersey Institute of Technology** **Spring 2015 - Present**

- Created coursework and taught Computer Science course, CS 101 – Computer Programming using MATLAB.
- Conducted lab sessions for the courses: Machine Learning, Advanced Java, and Introduction to Databases.

**Research Assistant** **New Jersey Institute of Technology** **Summer 2016 - Summer 2017**

- Implemented a unified framework for accurate vehicle detection using a combination of fine-tuned YOLO CNN and MOG background subtraction method improving the detection accuracy from 85% to 93%.
- Created vehicle tracking, congestion detection and speed estimation modules to support real-time traffic video analysis from NJ highway cameras.

**ACM Development Team Head** **ACM Chapter, Mumbai University** **Fall 2013 – Spring 2014**

- Supervised the implementation of 4 web development projects by managing a team of 6 student developers.
- Conducted workshops on Linux, full stack web technologies and application development using Python.

## EDUCATION

**Newark, NJ** **New Jersey Institute of Technology** **Fall 2014 – Summer 2018**

- PhD. in Computer Science specializing in Machine Learning and Computer Vision, GPA: 3.96/4.0

**Mumbai, India** **Mumbai University** **Fall 2010 – Spring 2014**

- B.E. in Computer Science and Engineering, Distinction

## SELECT PUBLICATIONS (Google Scholar Profile: https://goo.gl/VAZm2T)

- A Sparse Representation Model Using the Complete Marginal Fisher Analysis Framework and its Applications to Visual Recognition, **IEEE Transactions on Multimedia**, August 2017.
- Sparse Representation Based Complete Kernel Marginal Fisher Analysis Framework for Computational Art Painting Categorization, **ECCV**, October 2016.

## PROJECTS

- **LightGBM Model for Ad Fraud Detection** (2018)
  - Processed 240 million ad click records with 8 columns and extracted 15 aggregate and time-delta features.
  - Developed multiple LightGBM models improving the test set AUC to 0.9819 from 0.9667 (XGBOOST model).
  - Technical Stack: LightGBM (Gradient Boosting), Pandas, Python, Feature Selection.
- **Bi-LSTM Model for Comment Classification** (2018)
  - Developed a bi-directional LSTM deep learning model with GloVe embedding for comment classification.
  - Tuned parameters using Hyperas package achieving a test accuracy of 98.46% from 94%.
  - Technical Stack: Keras, TensorFlow, Bi-LSTM, GloVe, NLP, Python.
- **Stacking Based Ensemble Learning Method** (2017).
  - Developed an ensemble learning method based on the stacking procedure using the Spark MLLib (PySpark).
  - Implemented on a 4 node Hadoop cluster with Spark engine for classification applications.
  - Technical Stack: Spark MLlib, Hadoop, Python.

## ADDITIONAL AWARDS

- **First Prize, Machine Learning Contest, New Jersey Institute of Technology.**
  - Developed a learning model for gene classification using mRMR algorithm, RFE and RBF-SVM.
  - Awarded 1st prize for achieving the highest test accuracy of 66.72% with 10 features.
- **Third Prize, National Level Technical Paper Competition, Mumbai University.**
  - Created a learning method to improve medical diagnosis using neural networks and k-NN.
  - Awarded 3rd prize selected out of more than 75 technical papers. (senior year thesis paper)

## LANGUAGES, FRAMEWORKS AND DATABASES

- Proficient: Java; PHP; SQL; Python; MATLAB; | Familiar: C++; JavaScript; JQuery; AJAX;
- Caffe; TensorFlow; Keras; Code Ignitor; Laravel; WordPress; MySQL; BootStrap;