Saideep Reddy Pakkeer

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Education

University of California San Diego *Anticipated Mar. 2020*
- Masters in Machine Learning and Data Science — GPA - 3.96/4.0

Indian Institute of Technology, Bombay (India) *2012 - 2016*
- Bachelor of Technology with honors in Electrical Engineering — GPA - 8.23/10

Experience

Data Scientist Intern - Intel Corporation, Phoenix, Arizona Area *Jun. 2019 - Sep. 2019*

DATA ANALYTICS AND STATISTICAL METHODS TEAM
- Built unsupervised deep learning models to **cluster 3-D shapes** using **autoencoders** to identify defects due to solder bridging
- Optimized the process control systems of advanced packaging and test technology group working **across teams** (module engineers) using **NLP** and built predictive models to identify important factors affecting the test failures

Data Science Analyst - Actify Data Labs, Bangalore, India *Nov. 2017 - Aug. 2018*

SENTIMENT ANALYSIS
- Built an end-to-end pipeline in **Django** (dashboard, playback, upload among other functionalities) and **pushed** it **to production** to classify an audio segment for sentiment using an ensemble of **gradient boosting** models with more than 85% accuracy
- Classified speakers according to his/her identity using **Hidden Markov Model** on the audio signal (**Speaker Diarization**)

CANCER NODULE DETECTING SYSTEM
- Developed cancer nodule detection system using **mask R-CNN** implementation(transfer learning) on DICOM images in **Tensorflow**
- Trained & tested on the Digital Database for Screening Mammography(**DDSM**) and worked with a local hospital in India for beta testing

Analytics Specialist - Opera Solutions, Noida, India *Jun. 2016 - Oct. 2017*

IDENTIFYING TAX EVADERS, OPERATION CLEAN MONEY - GOVT. OF INDIA
- Designed a likelihood model (**Logistic Regression & XGBoost**) for the high-profile demonetization project for identifying tax-evaders likely to respond to Govt. notices working directly out of the **Income Tax Department**
- Engineered a predictive feature set from **huge** & **diverse** data sources - Income tax **returns**, bank **transactions**, property purchases

PREDICTING CARGO BOOKING WEIGHT
- Built ensemble of gradient boosting models (**xgboost**) for predicting cargo show-up rate for a major airline
- Tuned the ensemble model (eta, max depth, min child weight) for accurate prediction of the shipments tendered weight within 5 percent error range for **96%** of the bookings and **deployed** the model

Research and Projects

Multi-label classification of news articles | NLP & Recommender Systems *Sep. 2018 - Jun. 2019*
- Implemented a text classifier for categorizing news articles into 30 categories (crime, health, sports) using a **DenseNet** neural network
- Demonstrated the performance among different classifiers using techniques like **TF-IDF, n-gram** and achieved an accuracy of **96.8%**
- **Deployed** the model and built a web application in **Dash** {https://cse256.herokuapp.com/}

Multi-class image classification on Fashion MNIST | Deep Learning *Sep. 2018 - Dec. 2018*
- Built different classifiers (**ResNet, VGG, LeNet**) using different architectures of **CNNs** to classify Fashion MNIST images (10 classes)
- Using ensembling techniques to boost weak learners and make a strong and robust model achieved an accuracy of **94.3%**

Linear program for non-convex function approximation | Convex Optimization *Dec. 2015 - May. 2016*
- Developed a linear program for approximating a non-convex function with a **convex envelope** which is a major concern for many machine learning problems in recent years (**Bachelor Thesis**)
- Demonstrated the performance on various non-convex functions, incorporting the ideas of linear function approximation and **constraint sampling** to reduce the curse of dimensionality by simulating the linear program in MATLAB

Publication

Approximating convex envelopes using linear programming *Nov. 2018*
- *Akhil Shetty,* **Saideep Reddy**, *Vivek S. Borkar, Neeraja Sahasrabudhe*, submitted to Annals of Operations Research (ANOR)

Achievements & Awards

| 2012 | **All India 91st rank** in Indian Institute of Technology - Joint Entrance Exam among 500,000 students | *National* |
| 2012 | **All India 26th rank** in AIEEE (All India Engineering Entrance Examination) among 1 million students | *National* |

Skills & Courses

Languages & skills: • Python • Scikit-learn • Pytorch • Tensorflow/Keras • Spark • Django • AWS • Git • SQL • Dash

Relevant courses: • Statistical Natural Language Processing (Language Modelling, Machine Translation, Sequence Tagging, Text Classification) • Deep Learning for Computer Vision • **Design of experiments**[Intel] • Recommender Systems & Web Mining (Latent-factor models, Collaborative filtering) • AI: Learning Algorithms • Big Data Analytics Using Spark

Positions of Responsibility

- **Graduate Teaching Assistant**, Math department at UCSD - Fall, Winter & Spring 2019 • **Computer Science Tutor** at UCSD - Fall'18
- **Alumni Secretary**, Electrical Engineering Dept.: Conducted Student Alumni Meet with the Alumni Relation Cell at IIT Bombay