

# Saideep Reddy Pakkeer

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## Education

### University of California San Diego

- Masters in Machine Learning and Data Science

Jun. 2020

GPA - 3.97/4.0

### Indian Institute of Technology, Bombay (India)

- Bachelor of Technology with honors in Electrical Engineering

2012 - 2016

GPA - 8.23/10

## Experience

### Data Scientist Intern - Intel , Phoenix, Arizona

Jun. 2019 - Sep. 2019

#### SHAPE ANALYSIS

- Built unsupervised deep learning models (**autoencoders**) to **cluster 3-D shapes** from the coplanarity measurements on the substrate
- Learnt **low dimensional representation** of high dimensional coplanarity data to identify defects due to solder bridging
- Built predictive models using **NLP** techniques working **across** the module engineering **teams** to identify important factors affecting test failures for different products (Ice Lake, Whiskey Lake)
- Automated the python scripts to run on newer data in the future for production and later to be integrated to internal systems at Intel

### Data Science Analyst - Actify Data Labs (AI Startup), 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 (Object Detection)

- Developed cancer nodule detection system using **mask R-CNN** implementation (transfer learning) on DICOM images in **Tensorflow**
- Trained & tested on the Database of Mammography (**DDSM**) using **Deep Learning AMI** working with a local hospital 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**) to send **targeted emails/notices** 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
- **Clustered** closely related PANs (like the SSNs in the US), starting with high-risk PANs using their relationships

#### PREDICTING CARGO BOOKING WEIGHT

- Built ensemble of gradient boosting models (**xgboost**) for predicting cargo show-up rate (overbooking vs no-show) for a major airline
- Achieved accurate prediction of the shipments tendered weight within 5 percent error range for **96%** of the bookings and **deployed** the model built entirely in python

## 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%**
- Built a web application and **deployed** the model 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** (**Bachelor Thesis**)
- Demonstrated the performance on various non-convex functions, incorporating 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	<b>All India 91<sup>st</sup> rank</b> in Indian Institute of Technology - Joint Entrance Exam among 500,000 students	National Exam
2012	<b>All India 26<sup>th</sup> rank</b> in AIEEE (All India Engineering Entrance Examination) among 1 million students	National Exam

## Skills & Courses

**Languages & skills:** • Python • Spark • Scikit • Pytorch • Tensorflow/Keras • Django, Dash • AWS • Git • SQL • Matlab • R  
**Relevant courses:** • Statistical Natural Language Processing (Language Modelling, Machine Translation, Sequence Tagging, Text Classification) • Deep Learning for Computer Vision • **Design of experiments**<sup>Intel</sup> • Recommender Systems & Web Mining (**Latent-factor models**, **Collaborative filtering**) • AI: Learning Algorithms • **Big Data Analytics Using Spark**

## Positions of Responsibility

- **Graduate Teaching Assistant**, for 4 quarters in the Math department at UCSD
- **Computer Science Tutor** at UCSD - Fall'18
- **Alumni Secretary**, Electrical Engineering Dept.: Conducted Student Alumni Meet with the Alumni Relation Cell at IIT Bombay