Saideep Reddy

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Education

University of California San Diego *Anticipated Mar. 2020*

- Masters in Machine Learning and Data Science

Indian Institute of Technology, Bombay *2012 - 2016*

- Bachelor of Technology with honors in Electrical Engineering with GPA of 8.23/10

Experience

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

Sentiment Analysis

- Built an end-to-end system in **Django** to score the audio recording based on the emotion in it which includes uploading an audio file (single and bulk), playing it and scoring it for emotions by a machine learning algorithm (**gradient boosting**)
- Designed and configured **database**(postgres), templates for backend processing and front end user interface (HTML & CSS)

Analytics Specialist - Opera Solutions, Noida, India

Operation Clean Money, Govt. of India *Mar. 2017 - Oct. 2017*

- Developed a response likelihood model (**Logistic Regression & XGBoost**) for the target segment during **demonetization** which predicts the likelihood of a tax evader to respond and voluntarily disclose income
- **Relationship Clustering** for identifying clusters of closely related PANs(like SSNs in the US), starting with high-risk PANs

Predicting cargo booking weight *Jul. 2016 - Feb. 2016*

- 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

Intern - Altisource Business Solutions, Mumbai, India *May. 2015 - Jul. 2015*

Optimizing loss mitigation algorithm

- Researched and evaluated quantitative model implementations for **loss mitigation problems** (debt modifications) and proposed use of a new algorithm (Genetic Algorithm) for improving performance
- Evaluated **Pattern Search** and **Genetic Algorithm**, and used them in solving optimization problems, also analyzed the effects of constraints and initial point in these techniques

Research and Projects

Cancer nodule detection and localization (Mammography) | Deep Learning *Apr. 2018 - Aug. 2018*

- Implemented a cancer nodule detection system using **mask R-CNN** and Region of Interest Pooling
- Trained and tested on the Digital Database for Screening Mammography and worked with a local hospital in India for beta testing

Linear program for non-convex function approximation | Bachelor Thesis *Dec. 2015 - May. 2016*

- Developed a linear program for approximating any non-convex function with a **convex envelope** using Oberman's characterization of the convex envelope and the ideas of linear function approximation and **constraint sampling** to reduce the curse of dimensionality
- Demonstrated the performance on various non-convex functions by simulating the linear program in MATLAB

Comparative analysis on Eigenfaces Vs Fisherfaces | Face Recognition *Jul. 2014 - Dec. 2014*

- Implemented a face recognition system using Fisher Faces (**LDA**) and performed a comparative study with Eigen Faces (**PCA**) technique
- Demonstrated the performance of both methods in **MATLAB** under various conditions of illumination and facial expressions

Design of spiking neural networks | Neuromorphic Engineering *Apr. 2013 - May. 2013*

- Learned about various spiking neuron models and simulated them in **MATLAB**
- Worked on design of spiking **neural networks** and learning rules to train the synaptic weights to elicit a spike

Publication

Approximating convex envelopes using linear programming *Dec. 2016*

- Developed a linear program using Oberman's characterization of convex envelope for approximating any non-convex function with a convex envelope and submitted to the journal **Annals of Operations Research** (ANOR-D-16-01198)

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*

2017 **Certified in business communication** by Dale Carnegie & Associates Inc.

Skills & Courses

Programming languages & skills: • Python • SQL • R • Matlab • C++ • C • Django • Git • Tensorflow • CSS • Keras • LaTeX

Relevant courses: • Machine Learning for Image Processing* • Foundations of Machine Learning • Digital Image Processing • Stochastic Optimization • Probability and Random Processes • Game Theory • Deep Learning specialization* (Coursera)

Positions of Responsibility

- **Tutor** for the undergraduate course, Fluency in Information Technology in the Computer Science & Engineering Department at UCSD
- **Alumni Secretary**, Electrical Engineering Dept.: Conducted Student Alumni Meet with Student Alumni Relation Cell at IIT Bombay