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

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

SENTIMENT ANALYSIS
- Built an end-to-end pipeline in **Django** to score an audio recording for sentiment by a machine learning algorithm (**gradient boosting**)
- Designed functionalities like uploading an audio file (single and bulk), playing it and scoring it for emotions
- Developed the algorithm, designed & configured **database**(postgreSQL), templates and achieved an accuracy of **85%**

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

IDENTIFYING TAX EVADERS, OPERATION CLEAN MONEY - GOVT. OF INDIA
- Designed a response likelihood model (**Logistic Regression & XGBoost**) for identifying tax-evaders during **demonetization**
- Engineered a predictive feature set using different data sources - Income tax returns, bank transactions, property purchase
- **Clustered** closely related PANs(like 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 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 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*
- Developed a cancer nodule detection system using **mask R-CNN** and Region of Interest Pooling on DICOM images of mammogram
- 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 | Convex Optimization   *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** (Leaky Integrate & Fire model, Adaptive Exponential)
- 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* • Recommender Systems & Web Mining • Digital Image Processing • Stochastic Optimization • Probability and Random Processes • Game Theory • Deep Learning specialization* (Coursera)

Positions of Responsibility

- **Tutor** for the course, Fluency in Information Technology (∼90 students) 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