SAURABH KULKARNI

Contact Information

linkedin.com/in/saurabhkulkarni2312 saurabhkulkarni2312@gmail.com
Portfolio: saurabhkulkarni2312.github.io Ph.No: +1-858-729-8148

Education

University of California San Diego,
- MS. Electrical and Computer Engineering (Specialization: Intelligent Systems) (GPA: 3.5/4)
- Certificate: Micro MBA, Rady School of Management, UCSD
- Received grades **A+** in Data Analysis grad course, **A** in Recommender Systems course

Birla Institute of Technology and Sciences,Pilani,
- BE. Electrical and Electronics Engineering (GPA: 8.35/10)

Work Experience

Graduate Intern, IgrenEnergi, Inc **Aug 2016 - Dec 2016**
– Explored solar forecasting techniques using device data, weather data, panel characteristics and shading patterns in Python. Project was implemented in R and Python.

Co-Founder and Tech Lead **Jan 2015 - June 2015**
– Co-founded a company in medical devices space (Sattva). Selected among top 10 tech innovations in 2015 by Stanford Business School and FICCI at IIGP 2015. *(Results Link)*
– Developed a low-cost portable solution for fetal monitoring in rural India.

Undergraduate Intern, Intel **July 2014 - Dec 2014**
– Implemented a accelerometer (ADXL345) and gyro (ITG3200) based linear and lateral g-force measuring system using Python and Octave. Pilot was tested on a 4-wheel vehicle using Rasberry Pi. G-forces and roll,pitch,yaw angles were estimated using adaptive algos. Sensor noise modeling was performed for steady state condition using Allan Variance in Octave

Recent Projects

Predictive Modelling for Insurance Claim Approvals *[R: ggplot2, xgboost, glm, randomForest]*
– Implemented an end-to-end R-based data solution to classify 114000 insurance claims in an unclean imbalanced dataset with 133 variables.
– Predicted class probability Random Forest, XGboost and achieved improvement over logistic regression baselines. Achieved a logloss score of 0.456 using xgboost.

Amazon Reviews Recommender System *[Python: sklearn, pandas, numpy, scipy]*
– Built a recommender systems to make ratings predictions and estimate review helpfulness for a given database of Amazon reviews.
– Ratings prediction was performed using linear models and latent factor models using alternating LS and achieved a 28% MSE improvement over baselines. Implemented GradientBoostedTrees to estimate helpfulness rating to improve MAE by 12%.

Image Segmentation using Probabilistic Techniques *[MATLAB]*
– Performed object segmentation from given image using different learning techniques - Maximum Likelihood, Bayesian Estimation, Gaussian Mixture models using EM.
– Improved classification performance, achieved dimensionality reduction from ML model to EM

Handwritten Digit Classification *[Python: scikit-learn, numpy, seaborn]*
– Performed digit recognition using several techniques: bayesian estimation, gradient descent using softmax and feed-forward multi-layered neural net with backprop in Python. Optimized performance for different learning rate, network topology, activation functions batch size.
– Achieved a best accuracy of 96.8% on the Neural Net.

Deep Learning *[Python: keras, Tensorflow]*
– Performed transfer Learning using Convolutional Neural Nets, using Keras, Tensorflow.
– Music Generation using Seq2Seq Recurrent Neural Network using Keras

Relevant Skills and Leadership

Languages and Tools: Python, R, SQL, MATLAB, Spark, C, C++, Linux, Git
Libraries: Numpy, Scipy, Sklearn, Pandas, Seaborn, Keras, Tensorflow
Concepts: Linear Models, Bayesian Statistical Learning, Random Forest, Boosting, Clustering, PCA, Neural Nets, Recommender Engines
Leadership: Co-founded medical device startup: selected as top 10 innovators at IIGP 2015 by SBS and FICCI. Led a team of 3 TAs and 8 tutors as head teaching assistant at UCSD.