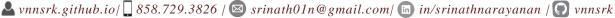
# SRINATH NARAYANAN





Looking for full-time opportunities starting Mar 2018 in Software Engineering and applied machine learning

## **EDUCATION**

## University of California San Diego (GPA, 3.73/4)

Sep 2016 – Mar 2018 (expected)

➤ M.S: Electrical and Computer Engineering, Intelligent Systems

## Anna University, India (CGPA, 8.86/10)

2012-2016

> B.E: Electronics and Communication Engineering (Hons.)

## **WORK EXPERIENCE**

## **Data Scientist intern**

## Becton Dickinson (BD), San Diego

Summer 2017

Drug budget management -

- > Led an intern team of 4 in building a R tool for optimizing pricing strategies for pharma drugs, and forecasting demand-supply variations by following CRISP-DM principles.
- > Satisfied business success criteria by achieving a 0.92 correlation in a 3-month window with 11% mean absolute percentage error (MAPE), by developing gradient boosting, time series LSTM and ARIMA models.
- Conducted large-scale mining, parsing and analysis of information over a distributed network with 2 TB of data.

#### Data Science Workbench migration-

> Scripted high-fidelity and high-coverage field tests in Python to measure the speed, performance and bandwidth of the Cloudera data science workbench for an **Hadoop** ecosystem with 4 data nodes and 6 mining nodes.

## IPCV Lab, SSN College, India

Summer 2016

> Published a journal paper (Article 8306342, Hindawi publications) on Image Super-Resolution using Matrix valued operators. Extracted 2D spatial similarity kernels and improved image quality by 2.1 dB and image similarity by 22%.

#### Student researcher

# Indian Institute of Technology, Madras

> Built a sparse implementation of the 'Katamari' deep-learning ADAS algorithm using OpenCV and Python, that predicts pedestrian presence using CalTech 101 and KITTI datasets. Achieved a detection efficiency of 88%.

# **Analog Devices DSP Lab**

> Engineered the team project on auto-regressive sound equalizer using Kalman filters in AN-BF609-C processor. Achieved an 8:10 subjective equalization measure and a 22% reduction in MSE.

#### TECHNICAL SKILLS

- Programming: Python, R, C++, PySpark, Matlab, C, SQL
- Technologies: TensorFlow, Keras, Pandas, NLTK, Flask, OpenCV, RTVS, Caret, Shiny, Scrapy, BeautifulSoup

# **RESEARCH & PROJECTS**

- > Stacked Attention deep neural networks for Image Q&A: Captioning was modeled with a LSTM for scene classification and a RNN for semantic textual analysis with deep supervision in TensorFlow, achieving a 59% multiclass Hit-5 accuracy. Implemented 'protobuf' for configurations.
- > Weather pattern analysis using PySpark: Analyzed US climate over the past 75 years with NCDC data scraped using Beautiful Soup and Scrapy. Wrote Python scripts to perform distributed PCA and Eigen analysis, and visualize results using gmplot maps. Identified seasonal trends and global warming indicators with 75% signal correlation.
- > Sentiment analysis: Screened tweets with Twitter API, TextBlob and performed sentiment analysis to identify political preferences of people with keywords. Used distributed models on Spark, increasing productivity by 25%.
- > Recommender and Rating Predictor for Amazon products: Developed latent factor models using a dataset of 500,000 reviews in Python, using NLTK, Pattern and scikit-learn. Yielded MSE 1.13 for rating prediction with user biases and demographic/temporal regularizer. (Kaggle Rank: #8/120)
- > Statistical correlation of violent crimes in US vs socio-economic factors: Implemented a statistical model using polynomial elastic regression to identify correlation. Tested the null hypothesis for the top 5 causes for violent crimes with 85% confidence intervals.

# RELEVANT COURSEWORK

> Probabilistic reasoning, Basic and Adv. Recommender system, Big Network Data, Learning and Inference, Neural Nets, Statistical Data Analysis, Deep networks, Computer Vision, Image & Speech Processing, Parameter Estimation