SRINATH NARAYANAN

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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.

Intern **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** Summer 2015

- 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%**.

Intern **Analog Devices DSP Lab** Summer 2014

- 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%** multi-class **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