Rahul Sangole, Data Scientist.

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# Profile

Data scientist with Six Sigma Black Belt certification and 11 years of work experience delivering value in a Fortune 500 companies. 5 years of experience leading teams solve business problems in areas of engineering, service, quality and product management.

# Experience

**Apple, 2019 – Present**

## Data Scientist, Jul 2019 – Present

* Develop time series statistical forecasting models for hardware resources for Apple’s internal applications which allows the business to right-size hardware purchases
* Develop interactive dashboards (using *R Shiny)* exposing KPIs and opportunities for business analysts to right-size resource allocations for Apple’s engineering teams
* Develop production ready *Docker* images for reproducible code development by the data science team
* Develop internal R packages which perform data extraction from internal APIs, used by the data science team
* Develop automation (Continuous Integration) to unit test packages, deploy data pipelines, deploy analytical solutions

**Cummins, 2008 – 2016**

## Data Science Manager, Aug 2016 - May 2019

* Led a team of data scientists to deliver algorithms that alert engineers upon anomalous engines behavior reducing unscheduled operational downtime for mining customers resulting in financial savings of $1m+
* Developed unsupervised anomaly detection schemes using statistical tests, robust regression filters, process control methods, cusum control charts, ranked permutation transformation on multivariate datasets
* Deployed algorithms in production-ready R packages using functional, defensive programming using *trycatch, assertive, testthat, log4r, RevoScaleR* on an Azure HDInsights cluster with Hive and Azure Blob Storage
* Generated new insights on engine usage patterns across customers by application of *t-SNE* to high dimensional datasets that impacted the solution strategy of a major prognostics initiative
* Developed a failure prediction model on high class imbalance problem using lasso regression and *xgboost* models
* Developed analytics functional excellence practices: project chartering processes, CRISP-DM adoption, coding guidelines, R repos, common utility packages, version control practices (gitflow), company-wide technical sessions, monthly trainings etc
* Co-lead an initiative to investigate research publications for engine specific prognostics and anomaly detection methods
* Developed data science position profiles and competency definitions required to setup a new data science function within Cummins

## Six Sigma Black Belt, Nov 2014 – Aug 2016

* Led high complexity and big impact projects using 6 sigma for quality, product management, supply chain and engineering with financial impact from $150,000 to $10 million. Received numerous awards.
* Solved business problems using inferential statistics, null-hypotheses testing, regression, measurement systems analysis, control charts etc.

## Senior Structural Analyst, Mar 2010 – Nov 2013

* Drove $2 million cost reduction via improved engine component designs on numerous new product launches.
* Developed calibrated finite element analyses (2-10% error) to predict on-engine failures.

## Product Validation, Jan 2008 – Mar 2010

* Led 7-step problem-solving teams of engineers, data analysts, suppliers & customers to address high customer impact issues through root cause analysis using six sigma tools.
* Delivered annual savings cumulative of $250,000 to the business.

# Skills

* R, Python, SQL, Azure Databricks
* Visualization – plotly, ggplot2, lattice, matplotlib, seaborn
* Packages – data.table, tidyverse, caret, xts, pandas, scikit-learn
* RStudio, Anaconda, docker, shell, git, SAS JMP, Minitab, PostgreSQL

# Education

Master of Science in Predictive Analytics, Northwestern University

*Regression & Multivariate Analyses, Generalized Linear Models, Machine Learning, Deep Learning, Time Series Forecasting, Marketing Analytics, Experimental Designs, Text Analytics, Statistical Quality Control*

Master of Science in Mechanical Engineering, University of Michigan, Ann Arbor

# Achievements

* 2015 Chairman’s Quality Award
* 2014 Chairman’s Quality Award nomination
* Best Practice Awards for four Six Sigma Green Belt projects
* 2009 Most Valuable Player Award
* KVPY Scholar, Aero Department, IIT Bombay, 2003 - 2006

Skills

Languages & Cloud – R, Python, SQL, Azure

Visualization – ggplot2, lattice, matplotlib, seaborn

Packages – tidyverse, caret, xts, pandas, scikit-learn

Other – RStudio, Anaconda, git, SAS JMP, Minitab, PostgreSQL

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