Rahul Sangole, Data Science Manager.

rsangole@u.northwestern.edu | rsangole.netlify.com | github: rsangole | 812.390.5166

Cummins, *Data Science Manager* Aug 2016 - Present

* Lead 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+
* Develop 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-leading 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

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.

Cummins, *Product Validation* Jan 2008 – Nov 2014

* 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.

*Experience*

*Profile*

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

*Education*

2016 – 2019 Master of Science in Predictive Analytics

Northwestern University

2006 – 2007 Master of Science in Mechanical Engineering

University of Michigan, Ann Arbor

*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

*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

*Coursework*

Regression & Multivariate Analyses, Generalized Linear Models, Applied Machine Learning, Advanced Modeling Techniques, Deep Learning, Marketing Analytics, Experimental Design & Process Control, Text Analytics, Statistical Quality Control, DB Systems & Data Preparation

* Sales price prediction for Ames housing dataset using multilinear regression modeling using *lm*
* Wins per game predictive modeling for 186 years of baseball data using regression and decision trees using *glm, broom*
* Wine case purchase volume predictive modeling using poisson, negative binomial, and hurdle models using *glm, caret, broom*
* Model to predict donation amounts for a not-for-profit marketing campaign using a variety of machine learning modeling approaches including boosting, bagging, random forest, PCR and elastinet using *caret*
* Miles per gallon prediction on the *ISLR ::auto* using *flexmix* modeling
* Time series forecasting for item level forecasts for Russian software firm competition (1C). Top-down approach using TSLM, ARIMA, Prophet, STLF models using *xts, forecast, TSclust, mice*
* Time series forecasting for the DengAI, disease spread competition, utilizing transfer entropy, method of analogues, and single layer LSTM models using *xts, forecast, TransferEntropy, keras*
* Text analysis of aviation safety data using tSNE, TF-IDF and structural topic modeling in R using *tm, topicmodels, stm, tidytext*
* Developed fully connected neural network model developed using *numpy* and *pandas*, to classify MNIST dataset
* Customer segmentation modeling using tSNE, hierarchical agglomerative clustering and k-means followed by market segmentation profiling
* Discrete choice experiment modeling using Hierarchical Bayes Multinomial Logit to select product design
* Model to predict target market for campaign using random forests and naïve bayes models

*Extra Curricular*

* University of Michigan Recruiting Team, 2009 - Present
* Contributor and maintainer of *ProjectTemplate* R package
* Mechatronic projects using Arduino
* Yearly community involvement activities
* SAE Indiana Board Member, 2011 - 2016

Resume of Rahul Sangole, Continued.

*Academic Projects*