

# SAIRAAM VARADARAJAN

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## CAREER PROFILE

- Full-time Experience – 3 years in Data analytics, Statistical Data mining and Machine Learning, Probability Model building
- Programming skill – R, Python, SQL, PySpark, SparkR, C++(images), Java, Scala, R-Shiny, Tableau and Spotfire
- Experienced with Hadoop Distributed File System for data file storage, log data and Spark for data analysis.

## ACADEMIC PROFILE

Masters of Science, Major - Statistics (Industrial Engineering) - Arizona State University, Tempe AZ Fall 12 – May 14  
Bachelors in Engineering– Mechanical, PSG College of Technology, Coimbatore, India Aug 05 – May 10

## WORK EXPERIENCE

**Statistician / Industrial Engineer**, Medtronic Feb 14 – Present

- Designed MS SQL Database and maintained the warehousing for statistical analysis and Data visualization
- Implemented and maintained Quality prediction tool called Hybrid Predictive Analytics system – HPA
- Analyzed image data and delivered python tools which were capable of real-time image data analysis and prediction

### Statistical Modelling:

- Designed analytical models to identify anomalies (defects) during the course of manufacturing
- Programmed statistical model like penalized Mahalanobis distance, Bayesian models, neural network and Random forests to predict the manufacturing defect. Model was also improved by a user feedback learning algorithm on false detections.

### Database Management and HDFS:

- Programmed Stored Procedure(T-SQL) for Data storage, Statistical programming in MS SQL Database for visualization
- Administered and maintained Hadoop Distributed File System, Spark modules and experienced with Hive Programming
- Released Weblinks, Dashboards files on real-time Statistical Process - data analysis and data visualization

### Image Recognition Data Analysis Project

- Programmed python modules to analyse the die shift in a semiconductor testing using the captured image
- Programmed python modules to automate human-visual inspection using Template matching technique

**Executive Engineer / Data Analyst**, Larsen and Toubro Limited - Chennai, India Jun 10 – May 12

- Modelled Logistic Regression and Decision Trees to predict the Sales Auction Win – Loss percentage. Data Mining Models helped the sales department to track and improve their approach in the to-be-lost business deals.
- Analyzed sales market imports and In-land manufacturing sales to evaluate the price impact. Market potential calculation in various manufacturing segments, ROI, Break-even analysis, Cost-benefits, Payback Period on the sales product.

## SOFTWARE SKILLS

**Data Analysis:** - R, Python, Weka, Minitab, JMP, Design Expert

**Data Warehousing:** - SQL, Stored Procedure (T-SQL), Distributed File System (HDFS);

**Hadoop Ecosystem:** HDFS, Apache Pig, Apache Hive, Apache Spark –SparkR, PySpark, SparkR, SQOOP and Apache Mahout;

**Data Visualization:** Shiny UI, Spotfire, Tableau.

## WORK EXPERIENCE RELATED TO DATA ANALYSIS

**SharePoint Architect**, Arizona State University Aug 13 – Feb 14

- Designed a SQL integrated intranet website in SharePoint for a workflow management site for Project Approval.

**Bio-Statistician**, ASU Bio-Design Institute June 13 – Aug 13

- Deducted the quality of seals by clustering techniques. Conducted regression analysis modelling for Single Cell Analysis

## METHODOLOGY USED / IMPLEMENTED

ANOVA, Statistical Data Mining, Bandit algorithms. A/B Testing, MVT for website Optimization, Probabilistic Models, Un-Supervised learning, SVM, Neural Networks, Semi-supervised learning, Regression Analysis, Clustering, Associative / Sequential Rule Algorithms, Generalized Linear Models, Design of Experiments, Simulations, Operations Research (Deterministic & Stochastic), Data Structures, Arrays and Strings, Image, Hash functions, Data Warehousing

## PRESENTATION / CONTRIBUTIONS

- Presented Machine Learning model Implementation in BDAA Symposium and Science & Technology Conference
- Open source contributor for Scipy – stats package and working on Spark-Mllib Machine Learning algorithms