RAJEEV KUMAR SAHU

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WORK EXPERIENCE

Researcher (Tata Steel R&D, Jamshedpur)   *(July 2013 - Present)*

- 4 years of experience in mathematical modeling of metallurgical processes based on **data driven** approach using machine learning algorithms
- Have designed multiple solutions and tools using Excel, VBA etc. and also involved in analytics projects related to forecasting, inventory, supply chain, quality etc.
- **Key Projects Completed:**
  I. Built and Implemented a **Nozzle Clogging Index model** in the plant to take corrective measures for smooth casting of slabs, which converts an additional revenue of 2.5 crores
  II. Identified possible process parameters that leads to **porosity defects** in Ductile Cast Iron pipes at Tata Metaliks using data visualization
  III. Lead a project to provide possible solutions to minimize **Centre Line Segregation** in slabs using machine learning algorithms in python

Quantitative Research Intern (Golden Compass Quantitative Research Pte Ltd)   *(Oct 2017 - Present)*

- Research and implement machine learning techniques for trading applications in R, which involves implementing of academic and industry research, back testing strategies, and writing of white papers

TECHNICAL SKILLS

- **Analytics Tools:** SAS, R, Python, Statistica, Advanced Excel, VBA & Macro, MATLAB, Cloud Computing Platform (AWS EC2)
- **Big Data Tools:** Hadoop, Mapreduce, Pig, Hive, Sqoop, Flume, Oozie, PySpark
- **Analytics Techniques:** Linear & Logistic Regression, Regularization (Lasso, Ridge, & ElasticNet), K-Nearest Neighbor, Support Vector Machine, Decision Trees, Ensemble: RandomForest, Segmentation: KMeans, DBSCAN, dimensionality Reduction: PCA, T-SNE
- **Functional Knowledge:** Manufacturing, Banking & Financial services, Marketing, Risk and Operations Analytics
- **Technical Analysis:** Types of Candles: Color, Size, Shape, location, RSI, Bollinger Bands, Trend Reversal patterns: Engulfing patterns, Hammer/ Inverse Hammer/ Shooting Star/ Hanging Man/ Doji formation, Shaven tops & Shaven Bottoms, Position Sizing: Pyramiding & Inverse Pyramiding, Head & Shoulder patterns, Double top & Double bottoms, Mean Reversion phenomenon, Stochastic indicator, Demand & Supply Zone

QUALIFICATIONS

- **Indian Institute of technology, Kharagpur, M.Tech.,** Metallurgical & Materials Engineering, 2011-2013, 8.63 GPA
- **National Institute of Technology, Raipur, B.Tech.,** Metallurgical Engineering, 2007-2011, 8.46 GPA

CERTIFICATIONS & MACHINE LEARNING PROJECTS

Executive Program in Algorithmic Trading (EPAT) from *QuantInsti* **(PURSUING)**   *(July 2017 - December2017)*

- **Topics will be Covered:** System Architecture, Execution Strategy, Basic and Advance Statistics, Quantitative Trading Strategies, Option, Derivatives and Risk, Algorithmic trading Platform

Advance Big Data Science from *AnalytixLabs*   *(November 2016 - April 2017)*

- **Topics Covered:** Data analysis with python, Advance Statistics, Machine learning algorithms, Spark SQL & DataFrame and MLlib
- **Key Projects Completed:**
  I. **Fraud Ad Click Detection:** Developed a solution to differentiate a fraud click from the genuine clicks and provided a method to remove those fraudulent clicks
  II. **Churn Prediction:** Build a churn prediction model for fund raising organization to identify the customers who are likely to churn in near future
  III. **Credit Card Segmentation:** Grouped the customers to give different offers according to their customer behaviour to increase their purchase
  IV. **WALMART Sales Prediction:** To predict the weekly sales for 45 stores in different departments of several regions

Advanced Financial Analytics and **Fraud Analytics** from *Jigsaw Academy*   *(December 2015 - January 2016)*

- **Topics Covered:** Intro to BFSI, Credit Bureau, Securitization, Basel framework, Marketing Analytics, Campaign Management, CRM Analytics, Customer Retention, Cross-sell & Up-sell, Credit Risk Analytics, Credit Scoring, Collection Strategy, Fraud Analytics and Fraud Scoring
- **Key Projects Completed:**
  I. **Credit Scoring (Application Scoring Model):** Build an application scoring model to approve/decline the customer's loan application
  II. **Portfolio Segmentation:** Created a portfolio segmentation of XYZ bank to classify the customers based on defend, grow and exit
  III. **Merchant Fraud Detection Model:** Build a logistic regression model to predict the merchants which are likely to indulge in fraudulent activity. Data includes credit card transactions for 250000 merchants with 1008 fraud cases

Certified Hadoop & Big Data Expert from *Edvancer Eduventures Pvt Ltd.*   *(July 2016 - September 2016)*

- **Topics Covered:** HDFS, MapReduce, Pig, Hive, Sqoop, Flume, Oozie, Zookeeper, Spark
- **Key Project Completed:** Extracted insights by parsing & analyzing the weblog data and finally loaded into MySQL db

Certified Business Analytics Professional using SAS from *Edvancer Eduventures Pvt Ltd.*   *(July 2015 - November 2015)*

- **Topics Covered:** Simple Linear Regression, Multiple Linear Regression, Logistic Regression, Segmentation, Decision Tree, CHAID Analysis, Random Forest, Time Series Analysis
- **Key Project Completed:** Created an acquisition model for a Portuguese bank based on its direct marketing campaign for a term deposit product. Predicted the probability of acquisition for over 45000 customers of the bank

PUBLICATIONS

- Rajeev Kumar Sahu, Chandan Halder, P. K. Sen, Optimization of Top Gas Recycle Blast Furnace emissions with implications of downstream energy, **Steel Research International**, September 2016, Vol. 87, Issue 9, pp. 1190-1202
- Rajeev Kumar Sahu, P. K. Sen, Use of process models to estimate CO_2 emission reduction for top gas recycle furnace, **Computer Methods in Material Science**, Vol. 15, 2015, No. 2, pp. 322-326
- Rajeev Kumar Sahu, S. K. Roy, P. K. Sen, Applicability of Top Gas Recycle Blast Furnace with Downstream Integration and Sequestration in an Integrated Steel Plant, **Steel Research International**, Vol. 86, Issue 5, pp. 502-516
- Rajeev Kumar Sahu, Vandana Kumari, G. G. Roy, P. K. Sen, Use of Process Models to Estimate CO_2 Emission Reduction under Indian Conditions, **STEELTECH**, April 2013, Vol. 7, Issue 3, pp. 33-43

ACHIEVEMENTS

- Among top 8 finalists in **Big Data Analytics Theme** organized by Tech Gig Code Galdiators 2017 at Bangalore
- Achieved 37th position in **Fractal Analytics Hiring Hackathon** organised by Analytics Vidhya on July 2017

EXTRA CURRICULAR ACTIVITIES

- Trading in **NSE Equity** with my own capital of 7 lacs based on technical analysis
- Experienced the "**Snorkelling & Scuba Diving**" activity in Koh Tao Island, 2016
- Accomplished the trekking expedition to 11450 mt of Siyari Top in Garhwal Himalaya at Uttarkashi in the "**Outdoor Leadership Course**" organized by Tata Steel Adventure Foundation, 2014
- Participated in "**River Rafting & Flying Fox**" event conducted by Tata Steel Adventure Foundation, 2014
- Dared to do the "**Bungy Jumping**" from a height of 83 metres at Jumping Heights, Rishikesh, 2014
- Attended two day course on "Essentials of Intellectual Property Rights for Engineers & Managers" organized by Tata IP Management Group
- Awarded **National Cadet Corps** "A" Certificate by Ministry of Defence, Govt. of India