

SHIVANI MUDGAL

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PROFESSIONAL EXPERIENCE

DELIVERY LEAD

June 2017 to Present

Moody's Analytics, India

Roles and Responsibilities:

- Working as a **Team lead** and responsible for end to end project deliverables for building **interactive platforms**
- Working on **Text Mining** for extracting relevant details from news articles, social media and performing high level sentiment analysis and regression techniques
- Build a **Social Media Management tool** to provide summary about social media activity on Facebook, Glassdoor, LinkedIn, Twitter about the companies and highlighting trending news about the firm

DATA SCIENTIST

July 2014 to Aug 2015, Dec 2015 to June 2017

Cognizant Technology Solutions, India

Roles and Responsibilities:

- Worked on NLP and Big data Analytics for improving and building a search engine based on documents using Spark/Scala/ Python
- Worked on **Digital Image Processing** for classification of retinal images into disease or no disease and created an innovative solution that can recognize individuals from photographs using Latent Semantic Indexing
- Used **Regression, Time Series forecasting, Machine Learning, Market Basket Analysis** to build Statistical Models for Analysis of Market data

EDUCATION

Examination	Stream	University	Institute	Year	CPI/%
Post-Graduation	Applied Statistics and Informatics	IIT Bombay	IIT Bombay	2014	7.29
Graduation	Statistics (Hons.)	Delhi University	Ramjas College	2012	72.70
Intermediate/+2	Science	CBSE	Lady Irwin School	2009	82.00
Matriculation	Science	CBSE	Lady Irwin School	2007	87.80

WORK SUMMARY

Project Details: Mega-Infra Project Analytics Platform

(Moody's Analytics)

Role:

- Build a cloud hosted automated tool with interactive visualizations and NLP engine that will mine millions of news articles on thousands of mega infrastructure projects
- Used Advanced NLP on unstructured data to derive multiple project KPIs
- Build machine learning to provide realistic predictions of overruns of cost and time parameters of new projects and the probable root causes

Project Details: Mega-Infra Project Analytics Platform

(Moody's Analytics)

Role:

- Analyzed unstructured data via sources like chat room communications, email chains, feedbacks, blogs, etc.
- Used Advanced NLP and Machine learning for classifying the concerns, issues and challenges into different categories
- The solution helped client in understanding partners, employees and clients behavior and also to analyze hot topics and themes of discussion and improvement areas across the firm

Project Details: Drug Discovery and predicting Tumor Growth rate

(Cognizant Technology Solutions)

Role:

- Predicting the number of days on drug and Tumor growth rate in post treatment period (in follow-up period)
- Analysis of Dose response using prediction models as well as synergy scores and identification of potential Molecular Biomarkers

- Derived the causal effects between medications and side-effects related to it.
- Build an interactive web application to showcase the survival period of patients and causal relationship between drug and adverse events using Cytoscape and RShiny

Project Details: Spend Optimizer (Market Mix Modeling)

(Cognizant Technology Solutions)

Role:

- Project objective is to maximize the organization's revenue with optimal investment on each of the Promotional channel
- Applied Marketing Mix Model to help optimize the spends across various promotional channels that will help in maximizing the Return on Investments, Provided recommendations & insights basis historical data reviews
- Developed a Marketing mix model/ Response Curves using R to understand the effects of significant promotional channels Applied Non Linear solution for identifying the saturation levels and Greedy Algorithm for budget optimization

Project Details: Ontology based Semantic search for massive dataset

(Cognizant Technology Solutions)

Role:

- Build an engine to ingest, correlate and analyze journal documents and derive semantic insights based on complex relationship between documents – term occurrences.
- Analytics Engine delivers intelligent, latent, and semantic linguistic relationships between terms and documents and determines new relationships using Spark
- Used Text mining to identify and keep relevant tokens to be used in the model and build a latent semantic indexing model to identify semantic terms for every document using Python and Spark

Project Details: Build an engine to forecast the profit margin of an Organization at Various levels using SAS

(Cognizant Technology Solutions)

Role:

- Used multiple Time series techniques to forecast the profit margin of company for all verticals at different levels
- Used SAS, R for data cleansing, data manipulation and to analyze data at different time intervals

Project Details: IMHO: Question Answering problem using NLP

(Cognizant Technology Solutions)

Role:

- Used NLP and Machine Learning Techniques to answer questions based on unstructured text data
- Used Natural Language Processing Techniques and Information retrieval for solving Question Answering problems which is concerned with building systems that automatically answer questions posed by humans in a natural language
- Converted unstructured data into structured data and extracting relevant information from it to build the knowledge graph

Project Details: Predicting market share and increasing the annual profit of merchants

(Cognizant Technology Solutions)

Role:

- Retail data Cleaning, manipulation using SAS
- Used Market Basket Analysis to find the association between products in market data and forecasted the sales data using Time Series Analysis
- Build Models in linear regression and used multinomial regression to predict two or more factors simultaneously
- Integrated R with Hadoop and Spark and used machine learning techniques & predictive analysis on Big Data

CERTIFICATIONS AND ACHIEVEMENTS

- Wiley Certified Machine Learning Data Scientist, 2016
- Cognizant Certified R programmer
- Rock Star award (Employee of the month, July 2016) Cognizant Data Science team
- Won Cognizant data science hackathon for June and July 2016

TECHNICAL SKILLS

- Machine Learning – Regression, Clustering, Classification, Decision trees ,Random forests
- Natural language Processing, Time Series Analysis, Hypothesis Testing, Digital Image Processing, HMM
- Tools: R, SAS, RShiny, Python, Spark, SQL, Hadoop, MongoDB, SPSS, MATLAB, Cytoscape