Varkha Agrawal

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**Professional Synopsis**

**Year of experience: Total** 7 Years Industrial but Relevant **4.2 Year experience** in Data Analytics and Machine Learning

* Currently working in **HCL Technologies** Noida sector-126 as a Lead Engineer (12th Nov2014-Present).
* I have 1-year experience in **ARTech Info System Pvt.** ltdwith Client location **HCL Technologies** Noida sector-24 as a Senior Software Engineer (25th Nov2013 to 12th Nov2014).
* I have 1.8-year experience in **Samon Imaging Pvt. Ltd**, as a Development Engineer (04th April 2012 to 24th Nov2013).
* I have 1.3-year experience in **IndiaMart Intermesh Pvt. Ltd**, as a Data Entry Operator (29th Dec 2010 to 03th April 2012).

**Domain:** Predictive Data Analytics / Machine Learning / Text Mining/ Sentiment Analysis/ Time Series Analysis /Failure Prediction

**Certification:** Currently taking the course “Business Analytics Master Program” from SimpliLearn.

**Key Highlights:**

* Experience in development of projects on Predictive Modeling, Machine Learning and Failure Prediction for more than 3 years
* Good exposure in statistical programming language like R Language and PYTHON
* Proficient in using software like R-STUDIO and SPYDER
* Good understanding of various Supervised, Unsupervised and Ensemble Machine Learning methods
* Little work done in deep learning
* Ability to work well in both - team environment and individual environment

**Technical Portfolio:**

* Software/ Programming Language: R, PYTHON
* IDE: R-STUDIO, SPYDER
* Experience in Machine Learning algorithms: SVM, K-Means, ARM , Random Forest, Logistic Regression, Linear Regression, Cox-PH (Survival Analysis), VAR Model (Multivariate Time Series), Forecasting,
* Knowledge about the Confusion Matrix, Precision, Recall, K-Fold Cross Validation, Regular Expressions, Variance, Standard Deviation, Covariance, Correlation, Cosine Similarity, Distance Measurement Concept
* Basic knowledge of Data Visualization Tools such as Tableau
* **Library: -** OpenCV and RRO packages.
* **Familiar R packages: -** ggplot2, wordcloud, RColorBrewer, e1071, tm, SnowballC, tm, tools, stringr, stringi, xlsx, data.table, wordnet, XML, arules, rJava, lsa, caret, tables, vars, pls, varhandle, ade4, randomforest etc.
* **Familiar Python packages:** pandas, numpy, sklearn, SciPy, os, sys, datetime, matplotlib, re etc.

**Academic Qualification Profile:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Qualification** | **Year of Passing** | **Board/University** | **College** | **%(Percentage)** |
| B.E. | 2010 | R.G.P.V university, Bhopal(M.P.) | Govt. College of Rewa (M.P.) | 77.66%(Honors) |
| 12th | 2006 | M.P. Board, Bhopal | Excellence School for Panna (M.P.) | 89.2% |
| 10th | 2004 | M.P. Board, Bhopal | Excellence School for Panna (M.P.) | 81.4% |

**Achievements:**

* Received best appraisal rating (Exceptional Performer) for the year 2016-2017
* Received best appraisal rating (Exceptional Performer) for the year 2015-2016
* Received second best appraisal rating (Distinguished Performer) for the year 2014-2015
* College topper in B. Tech (4th year) with 86 %

**Software Skills:**

* Hands on experience of **R/Python** programming language
* Familiar with various terminology used in R and Python
* Generating word clouds and various type of 2D/3D plots in R
* TF-IDF Generation
* Data Mining Techniques
* Familiar with all data types and relevant function in R and Python
* Good experience on Software development, Debugging & Testing
* Preparing High/Low design document, test case generation, project related document preparation

**Summer Training:**

* **30** days major training as per as rule of RGPV from **Telecom Department of BSP** (**Bhilai Steel Plant**) Bhilai.
* **15** days minor training as per rule of RGPV from **S.G.T.P.S, Madhya Pradesh Power Generating Co. Ltd.** Birsinghpur, Distt. Umariya (M.P.)

**Project Based on Analytics:**

* Life Prediction of electronic and mechanical components (replaceable) in a Consumer product
* Real-time Object Identification in a Consumer Electronics Products
* Image processing and Machine Learning based cooking assistance
* Sentiment Analysis (Analysis based on review comments in market)
* PP Analytical Engine (Python Language)
* Auto Inspection (Defect Analysis using Image and Data Analytics in Python)
* PRM (People Relation Map in Python)
* Automation of Human Resourcing System

**Project Based on Image Processing:**

* ID card management tool (OpenCV with VC++)
* MIST (Motion Image Smoothing Technology)
* Emotion Detection
* Face Detection and Face Recognition
* Glitter Effect
* Gold Detection

**Major Project Description:**

* **Life Prediction of electronic and mechanical components (replaceable) in a Consumer product**

4 years old data is used for survival analysis, which gave 92% accuracy on predicting the life of a component in a running machine. This saved a huge cost in replacing the component before they meet the end of life, and availability of components before them going out of service.

**Technologies used:** Machine Learning Algorithms in Python (Cox-PH ), Django Rest API server

* **Real-time Object Identification in a Consumer Electronics Products**

Detection of food Items in raw and frozen stage in real time, using the Deep Convolution Neural Networks (ShuffleNet and DarkNet). Optimization of Deep Learning models to make them in size of 18MB for 40 different types of food categories, with an accuracy of 97%.

**Technologies used:** Python 3.6, Tensor-Flow, MobileNet, ShuffleNet, Django Rest API server

* **Image processing and Machine Learning based cooking assistance**

Including the identification of percentage age of cooking of raw food to final cooked food, Providing the cooking assistance to the cooks for entire cooking sessions by extracting the important features using Image Processing (OpenCV) algorithms and Machine Learning (SVM) based models.

**Technologies used:** Python 3.6, SVM, GLCM feature

* **Sentiment Analysis (Analysis based on review comments in market)**

Sentiment analysis of customer reviews on consumer product feature wise, using the NLP. We have targeted the all type of review comments in the form of Video, audio and Text, and got an accuracy of 89%.

**Technologies used:** Python 3.6, Text Blob, FFMPEG, Google API, Django Rest API server

* **PP Analytical Engine (Machine Failure Prediction)**

The main purpose of the project “Failure Prediction” is to identify the probability of the machine failure after a particular time period and also to find the components which will impact the cause of failure

**Technologies used:** VAR Model, Feature Selection Method such as PCA, Logistic Regression, RFE, Correlation Matrix

* **Auto Inspection (Defect Analysis using Image and Data Analytics in Python)**

The main purpose of the project “Auto Inspection” is to build a system using machine learning capabilities to auto inspect the print defects with in-line scanner unit without human intervention. Auto inspect of print defects will be done by comparing the reference images and scanned images [Object Images] on the printed media. The reference image used for defect identification is Proven Image.

**Technologies used:** SVM Model, Feature Selection Method such as Logistic Regression, RFE, Correlation Matrix, GLCM feature

* **PRM (People Relation Map in Python- Email Mining)**

The main purpose of the project “People Relation Map” is to build a system using machine learning capabilities to analyse over the Microsoft Outlook E-mails exchanged. This analysis will give the overview in form of Strength calculator, and Adjacency Matrix between different e-mail users.

**Technologies used:** RF Model, Feature Selection Method such as RFE, Email Processor, SMTP extractor, Footer Remover of the Legal as well as Quoted text information using SVM model, Strength Calculator

**Objective:** Reduce the time and effort in searching the contact person history of contacts, so the delegation of work will go smoothly

* **Automation of Human Resourcing System**

Trained the NextGenMFP engine on 10K resumes for 100 different JDs, and able to predict the suitable jobs and to a input resume from the resume database, without the external assistance (or human resource manager). It was 97% accurate system, which used the Machine Learning concepts like ARM, SVM, K-Means, Venn Diagram

**Technologies used:** C#, IIS Server, R Language, Machine Learning Algorithms

**Abstract:** Designed a system to retrieve different resumes for different employers from the same set of resumes depending on the weightage given by the employer to four different fields that are Domain, Location, Education, Qualification and Experience.

**Academic Project Work:**

* Have done project 4G wireless system as Major Project.
* Have done project DC Battery Charger as Minor Project.

**Personal Skills:**

* Visiting new places and Interfacing with new people.
* Positive attitude, Determined, High Energies.
* Hardworking and Sincere.
* Good decision making and analytical skills.
* Able to handle people in a very efficient way.

**Personal Details:**

Husband Name : Atul Agrawal

Date of Birth : 01JULY 1989

Marital status : Married

Nationality : Indian

Language Known : English, Hindi

# DECLARATION

I hereby certify that the information furnished above is authentic & complete to the best of my knowledge & belief.

**Date:**

**Place: Delhi NCR (Varkha Agrawal)**