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**Summary**

* 9.5+ years of overall experience, 3.5+ years of experience in analytics industry with expertise in Python, Scala, Play, Akka, Designing System Architecture, Implementing Solution, Designing Analytics workflow, Delivering Enterprise products and providing solution for business problems with unstructured & structured data across verticals like Product, Healthcare, Insurance, Retail, Pharmaceuticals, Telecom, etc.
* Responsible for providing solution using Data Mining,Machine Learning, Clustering, Modeling, NLP and Text Mining techniques to various business problems such as ‘Voice of customer’ for the marketing team of the world's largest software company-Analyzed the social media data around a product launch to gather insights which the marketing team could leverage in their launch strategies.
* Close to 3 years’ experience in development including feature research, social media platforms, supporting multilingual architecture and designing solution,

**Core Competencies**

* Understandclient’s requirements, discover root cause, design architecture, develop & implement a state of the art and different analytical solutions for diverse use cases like increase in their revenue, understanding their customers or looking for future investments and providing them end to end solution.
* Research and extreme experimentation for result validation through various matrices and optimizing models.
* Identify a huge variance in a large project and designed and implement changes immediately, before it could have a negative impact on a client’s business.
* Understanding effectiveness of social media, understanding VOC, competitors, brands, campaigns, events, etc and improve experience and inform business for enhancements.
* Coordinate the efforts of project teams to define production steps and testing plans and prepare correlating work schedules.
* Skilled in building rapport with client and team members. Able to see big picture, delegate effectively and motivate team to achieve on time project completion.
* Handled all aspects of project management by setting priorities, designing features, identifying roadblocks and providing recommendations for clear pathways.
* Motivated and ambitious individual able to give timely and accurate advice, guidance, support and training to team members and individuals. Possessing excellent management skills and having the ability to work with the minimum of supervision whilst leading a team of ten or more. Having a proven ability to lead by example, consistently hit targets, improves best practices and organizes time efficiently.

**Technical Skills**

* **Language** :Python, Scala, Perl, Cypher
* **Database** :RDMB, NOSQL, Graph
* **Operating Systems** :Linux, Windows
* **Data Mining/ML Techniques** : Natural Language Processing, Data Wrangling, Word Embedding, Text Mining, Random forest,SVM, Decision Trees, Classification, Clustering, Association Rule Mining.
* **Others** : Play, Rest APIs, Concordance and Summation Databases, Litigation Loadfiles, AWS

**Work Experience**

**Position:** Apprentice Leader (ProductLead)

**Company:** Mu Sigma (March 2014 to present)

1. **Project:** Designing and implementing framework for Text Mining/Analytics ( July 2017 to present )

**Responsibilities:**

* Gathering real word use cases for Text Mining/Analytics workflow
* Designing the architecture for the frameworkwith series different use cases
* Implementing solution and providing a framework for business analyst to perform different Text Mining techniques

**Tech Stack:** Python, Machine Learning, NLP, Data Wrangling, Word Embedding

1. **Project:** Monitoring weak signal and predicting future trends

**Responsibilities:**

* Translating the business requirement into technical design.
* Implementation the design and architecture for the framework for series of model to perform different analysis.
* Involved in gathering, cleaning, transforming and formatting the news listing data from different social media sources.
* Analyzing the data,build a system for identifying custom entities and performing analytical operation on entities to predict future trends.

**Tech Stack:** Python, Machine Learning, NLP, Rest API

1. **Project:** Listening VOC for the client’s Marketing Team to strategize their product launch.

**Responsibilities:**

* Understanding and translating the business requirement into technical design and architecting to the model.
* Gathering social data and integrate both social and survey data to help bring granularity to analysis and generating specific insights.
* Extensive research in choosing the best modelling technique for the given problem statement and data set.
* Identifying the trending topics and deep driving into the top themes to categorize data multiple categories with ~80-90% accuracy and address user’s issues accordingly.
* Generating contextual sentiment across different categories with ~80% accuracy, which helped Marketing Team to leverage in their launch strategies.
* Evaluation of the results through the different metrics and reworking the steps to make the model more accurate and predictable.

**Tech Stack:** Python, Machine Learning, NLP, Rest API

1. **Project:** Customer Complains Classification

**Responsibilities:**

* Crawling Social media and community web support data for client.
* Identify and filtering out up to 27% noise data to get more précised data for analysis.
* Build a framework for automated categorization of issues in a time-effective manner leading to quicker generation of actionable insights.
* Generated a hierarchical decision tree was created using rulesets to categorize comments into different buckets.
* Train multiple decision tree models to understand factors driving negative sentiment in customers.
* Identified deeper insights from the frequently mentioned negative issues and helped client to address them.

**Tech Stack:** Python, Machine Learning, NLP, Rest API

1. **Project:** Survey data analysis

**Responsibilities:**

* Performed data analysis on the structured data tocreate visualizations and understand various trends in public.
* A deep-dive into the top themes showed that the major topics of negative sentiment were around store complaints, delayed deliveries, hindrances in the payment process, customer satisfaction around product quality, website navigation issues.
* Identified the top themes and used Machine Learning approach to bucket such customer issues into variety of complaints like purchase experience, website feedback, checkout process, delivery rating across time.
* Segregated the data into well-defined complaint buckets to give a transparent split of what consumers were frequently complaining about, was able to categorize the comments with 65-70% accuracy.
* Used structured (ratings) data to give context to the insights from the unstructured (feedback text) data.
* Developed a robust and consolidated analytics artifact using Python for model validation, comparisons and performance enhancement though multiple model ensemble and performance measures.
* Built a framework for the Consumer Insights team to enhance the website and deliver a user-friendly purchase experience

**Tech Stack:** Python, Machine Learning, NLP, Rest API, Play, Scala

1. **Project:** Algorithm design for finding more appropriate Candidate words for Anchor word in Word Co-occurrence

**Responsibilities:**

* Recognizing different features which can affect the occurrence of a word in a sentence.
* Identifying features relationship between Candidate and Anchor word.
* Designed a system to incorporate different features and existing Apriori algorithm in order to discovering more appropriate co-occurred words.
* Extensive research and experimentation for algo validation and optimization.
* Built a flexible system to integrate custom options and generation desired results.

**Tech Stack:** Python, Machine Learning, NLP

1. **Project**: Custom Categorization/Sentiment Engine

**Responsibilities:**

* Designing & implementing Hierarchical Custom Categorization Engine which including lexicon based and supervised machine learning categories to provide hassle-free categorization solution to user.
* Leveraging Hierarchical tree based categorization along with Sentiment Engine to deep drive further for category based sentiments.
* Facilitate user to define their organic categories and categorized the data points from various domains.
* Enabled user to generation own context based sentiment models and further utilized them and sentiment identification.

**Tech Stack:** Python, ML, NLP, Rest API

**Position:** Development Lead

**Company:** WebfluenzPteLtd(October 2011 to February 2014)

1. **Project:** Webfluenz (MuFusion - Social)

**Responsibilities:** Fetching continuous real-time search data from a number of social media platforms using their Rest API’s & RSS. Further analyzing and categorizing data for Demography, Language, Geographic Location and Sentiment. Automated creation of web crawler in distributed environment. Implementation of fire hose API’s and added the capability to mine data from users Facebook, Twitter and LinkedIn social profiles & fetch analytics data from users Facebook, YouTube and LinkedIn social profiles. AWS & RDS instances creation & maintenance for entire product.

**Tech Stack:** Perl, Linux, MySQL

1. **Project:** Live Search - Webfluenz

**Responsibilities:** Fetching real-time data from Twitter, Facebook and YouTube for users input keyword for past 7 days in few seconds. Performing different analytics like identifying author’s gender, location & mentions text language, sentiment towards searched keyword.

**Tech Stack:** Perl, Linux, MySQL

**Position:** Senior Production Engineer

**Company:** HP Autonomy Software Asia PvtLtd (January 2008 to October 2011)

**Project:** Stratify Legal Discovery System

**Responsibilities:** Gathering business requirement and development of functional requirement specifications. Producing Documents for courts and opposing counsels as per the requirements of the legal firms for litigation using Concordance and Summation databases and java. Automated manual process to increase accuracy, reduce time and manual efforts and documented them for providing solution for different teams, generation documents for training and providing work around when necessary. Provided Technical support to Business Analyst in generating reports and was an active member in the improvement for processes involving document storage, processing and production to courts as per SEC (Securities Exchange Commission) /DOJ(Department of Justice) requirements.

**Tech Stack**: Java, Concordance and Summation Databases, Litigation Loadfiles, Windows, SQLite

**Highest Academic Qualifications**

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| --- | --- | --- | --- | --- | --- |
| **Class** |  | | | **Year of Study** | **Board/University** |
| Masters of Engineering ( Data Mining ) | |  | | 2007 | MITS Gwalior (M. P.) |
| Bachelor of Engineering ( CSE ) | | |  | 2003 | R.G.P.V., Bhopal (M.P.) |

**Declaration**

I, Sonal Agrawal, hereby declare that all the details furnished above are true to the best my knowledge.

Place: Bangalore