PFACTORIAL TECHNOLOGIES PRIVATE LIMITED

Our Services

DATA MODELING /ANALYTICS

> **PREDICTIVE MODELING**

> **MACHINE LEARNING**

> **1.NATURAL LANGUAGE PROCESSING**

> **2.DEEP LEARNING**

DATA ENGINEERING

> **DATA EXTRACTION**

> **DATA INTEGRATION**

> **DATABASE MANAGEMENT**

> **TRANSFORMATION**

> **DATA MANIPULATION**

DASHBOARD /VISUALIZATION

> **TABLEAU**

> **POWER BI**

> **KLIPFOLIO**

Pfactorial has experience on Descriptive Analytics, Diagnostic Analytics, Predictive Analytics, Prescriptive Analytics We have experience on data from the following sources to feed predictive models:

Transaction data

CRM data

Customer service data

Survey or polling data

Digital marketing and advertising data

Economic data

Demographic data

Machine-generated data

Geographical data

Web traffic data

We have experience on following business practices for Data gathering, Data Integration, Transformation, BI, Visualization and predictive modeling

Benchmark analysis

Data-gathering

Data-cleansing

Analysis

Evaluating goals and KPIs

Creating action plans based on analysis

Executing on plans

Streamlining processes

Predictive Modeling:Pfactorial has experience on following applications

1. Churn prevention Model
2. Customer Lifetime Value
3. Customer Segmentation
4. Next Best Action
5. Market Basket Analysis
6. Sales forecasting
7. Market analysis

Pfactorial has experience on :

Ordinary Least Squares Generalized

Linear Models (GLM) Logistic

Regression

Random Forests

Decision Trees

Neural Networks

Multivariate Adaptive Regression Splines (MARS)

Analysis on customer purchase model for promotion optimisation

Data flow
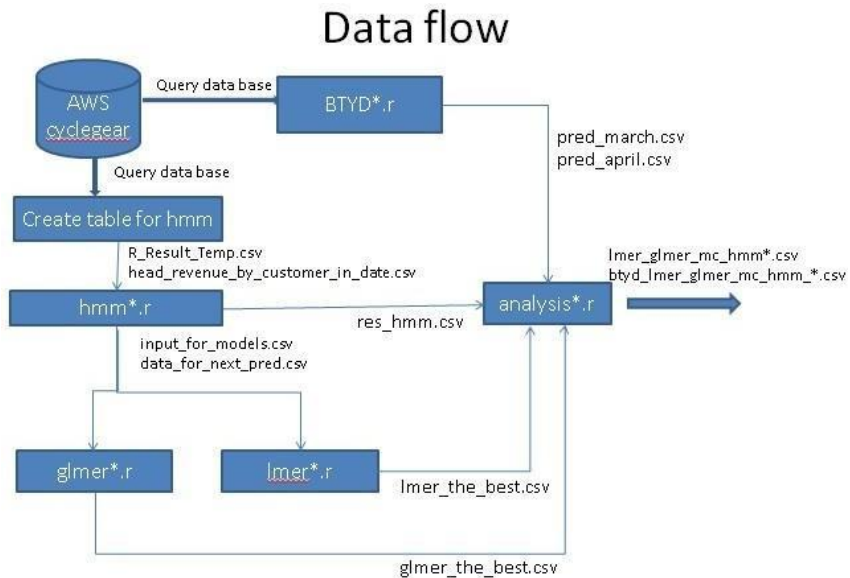
HMM Sudo code

- Iterates through the database and builds individual customer records as follows:
- SQL to retrieve purchase date, total purchase, and customer id
- SQL to retrieve date that a customer receives a promotion
- SQL groups the promotions and purchase dates for each customer
- Files are merged
- Data is ordered
- Data manipulation to converge on months that purchases were made for each customer
- Same data manipulation for determining months that promotions were received
- A purchase could occur either 5 days before Promotion In Home Date or 25 days after which is the time the next promotion is received.
- Creates two variables used in the analysis:

    "As.numeric.purchase" (did they or did they not buy) "eff.promo"
    (was a purchase made between catalog receipts.

- Markov.model with as.numeric.purchase
- HMM with as.numeric.purchase and eff.promo

MACHINE LEARNING

NATURAL LANGUAGE PROCESSING

Pfactorial offers natural language processing services using a combination of artificial intelligence, machine learning, and linguistics. Our team can help you to integrate NLP capabilities in your applications, bots, and IoT devices for a wide variety of industries to eliminate the complexity and process documents rapidly. By leveraging our NLP expertise, your enterprise can build a next-generation digital assistant that is contextually relevant, understands the language that people use to communicate, and make better decisions.The NLP application we have experience
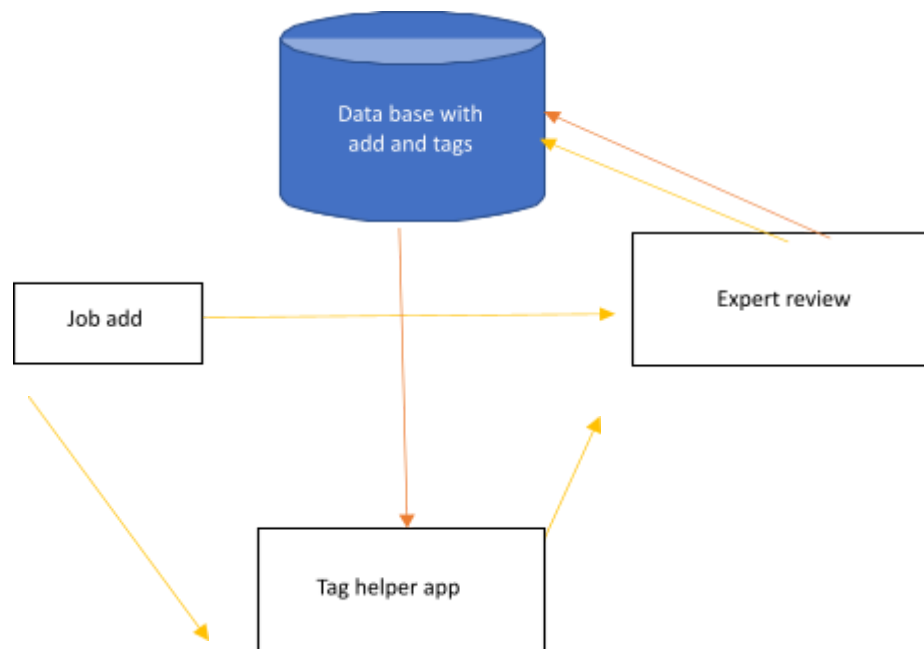
- Text Classification
- Sentiment Analysis
- Extracting key information
- Text Summarization
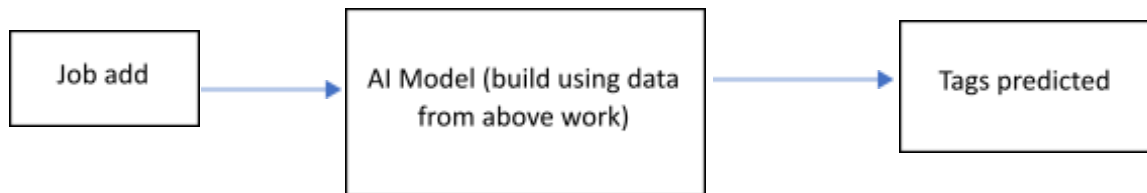- Tagging
- Translation

Some Interesting Work

ARCHITECTURE PROPOSAL FOR BUILDING AUTO TAGGER

FOR JOB ADD

1. Initial Data Base build up work flow Architecture

Follow the blue lines initially. This is where you need patience and energy. Once we have identified a good amount of reviews (5K adds is the first cut I have in mind) , we will move to the orange line . Then things will be faster. Once we have a good number of cases which went through orange (say another 5k), we can start building the AI models to do automatic prediction. Like below

End AI Model to automatically predict the tags :

Model will have the text from add as input and tags as output.

Comments and suggestions:

1. keep human in a loop for an initial period. This is needed to keep the quality of what we deliver.
2. create a simple web app to help manual tagging and pushing the tags to the database.
3. Build AI model doesn't use string matching-based search. string matching-based search can give clean results up to a small extent, but this will not be scalable and will be surpassed by a machine learning based model that will be built by a competitor.

DEEP LEARNING

Some of the services Pfactorial offers.

1. Object Detection

2. Image Classification

3. Style Transfer

4. Image Enhancement

5. Image Segmentation

For NLP/DEEP LEARNING we have our own GPU and servers. We have also experience on Google cloud, Amazon web services and Microsoft Azure platforms .

Some Interesting work we have implemented

1. Accelerating warehouse operations with neural networks
2. Crypto currency adviser
3. Legal contract data tagging
4. Second language learning track recommendation system

DATA ENGINEERING

Data Engineering Services We Perform

Developing complete end-to-end Data Pipelines

Ingesting Data from various sources into desired destinations

Managing various file format conversions

Performing Data Transformations

Performing Data Cleansing

Maintaining Data Integrity

Developing Data Models

Performing ETL and/or ELT jobs

Enriching Data for downstream Analytical Purposes

Performing Data Analytics

Performance Tuning

Some of the databases we have worked with

MySQL
Postgres
Amazon Redshift
Amazon Aurora (MySQL-compatible)
Azure SQL Database (SQL Server-compatible)
Azure SQL Data Warehouse (SQL Server-compatible)
Microsoft SQL Server
Google BigQuery, Google Sheets
Google Cloud SQL (MySQL-compatible
MongoDB BI Connector
Snowflake
Spark SQL
Excel,CSV,XML,JSON

We have experience in connecting to DB using API

DASHBOARD /VISUALIZATION

BI solutions

Pfactorial is working with Tableau, R, Power BI, SAS VA, Klipfolio, Python for delivering business intelligence (BI) solutions that cover the needs of both business users and business analysts. BI

software that we offer encompasses:

Data collection from different sources Data
parsing, cleaning and integration Data
warehouse and ETL
Online analytical processing (OLAP) for exploratory data analysis
Predefined reports and dashboards

CUSTOMIZED BI SOLUTIONS

We take business needs of a customer as a core of a BI solution and fill it with relevant features.

Customer-related BI solutions

Customer analysis

Sample features:

Cohort analysis
Basket/cart analysis
Customer lifetime value analysis
Customer spend history
Customer complaint analysis
Marketing analysis

Sample features:

Analysis of loyalty program efficiency
Forecast of the response to marketing campaigns
Market share analysis per country
Brand portfolio analysis
Brand awareness analysis
Sales analysis

Sample features:
Sales and profitability analysis

Progress measured against sales goals

Category performance analysis

Sales seasonality analysis

Ecommerce analysis

Sample features:

Conversion rates analysis

Cart abandonment analysis

Visitors' engagement analysis

Analysis of the coupons redeemed

Assortment analysis

Process-related BI solutions

Performance analysis

Sample features:

KPI status vs. target

Alerts when not reaching the target

Department and employee performance analysis Root cause analysis

Industrial analysis

Sample features:

Forecast of production levels

Analysis of quality assurance efficiency

Cost efficiency analysis

Asset analysis HR analysis

Sample features:

Payroll analysis

Compensation analysis

Talent management analysis

Absenteeism analysis

DATA SOURCES

We deliver business intelligence solutions that allow companies to analyze data from multiple sources (typically, 20 – 30) to get a complete picture of their business.

- ERP modules (Finance, Accounting, Sales, Marketing, Human Resources, Supply Chain, etc.)
- CRM
- Warehouse management system
- Ecommerce
- Website logs
- Sensors, controllers
- Customer surveys/questionnaires, market research
- Time tracking system
- Global positioning system
- Social media
- Customer mobile apps
- Call-centers records
- Official stats