Sonal Singh

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Experience | CPG, Retail, Manufacturing, Supply Chain, Logistics, Fintech, Software Analytics

Data Scientist (Lead)– Sigmoid Analytics
Mar '21 – Present
Leading a team of five data scientists across e-commerce, retail & software analytics

CAMPAIGN OPTIMIZATION ENGINE | AMAZON

- Developed a **keyword & product recommendation engine** – which recommends the right keywords to bid for & the optimal bid price to maximize ROI
- It was a non-linear statisitcal model which predicts the target return and target bid price that should be used for for a given keyword and campaign
- MAPE < 15% of predicted return vs actual return – high accuracy model
- Reduced campaign expenditure by 19.8% - **increasing ROAS**(return on advertised search) by **12.8%**

CUSTOMER CHURN PREDICTION & DATA MART | GARDEN PRODUCTS MANUFACTURER

- Modeled **customer churn** for a gardening products retailer, using XGBoost classification models with high AUC-ROC of 0.96
- Improvement of **0.12 pts.** over previous RF model using **feature engineering** and extensive **hyperparameter tuning**
- Designed and developed a **business datamart** – harmonizing **third party API gateway, Google Analytics, Clevertap and internal data.**

Decision Scientist – Mu Sigma Inc.
July '19 –Oct' 20

SALES FORCE PLANNING & OPTIMIZATION | RUSSIAN PETCARE MANUFACTURER

- Built a **sales force planning & optimization framework** to maximize sales uplift/ROI while reducing expenditure
- **Clustered** outlets and measured impact of visits on each cluster using a **regression** model
- Designed a **Mixed Integer programming** (MIP) based **optimizer** to generate visit plans
- Developed a planning & reporting tool using **PowerApps** to design plans & report KPIs
- Impact of ~3% incremental **sales uplift**(+**$6.2MM)** and sales force expenditure **reduced by 24%($0.5MM)** – and savings of **960 hours/quarter effort**

MARKETING MIX MODEL & PRIORITIZATION ENGINE| ENERGY BAR MANUFACTURER

- Created a **sales driver model** for attribution of sales uplift to different marketing levers like price promotions, in-store sampling, features and displays using **ElasticNet regression**
- Designed a **marketing mix optimizer** to create the **best marketing plan** which takes the investment of each promotion channel and recommends investment to maximize ROI
- Built **a prioritization engine** which recommends the stores and regions sales reps need to focus on for maximum uplifts - **reducing $390k in** investment & increasing sales uplift by 7%

COMMERCIAL SUPPLY CHAIN INSIGHTS | RUSSIAN CPG MANUFACTURER

- Built and automated the creation of business data mart based on **SAP Atlas** & internal data
- Implemented a **data quality management layer** to the **harmonized data** source to improve the quality and scope of data driven decisions
- Designed and developed interactive **PowerBI dashboards** to track **supplier contracts**

SKILLS

Code	Tools & Viz
Python	AWS Sagemaker
SQL	Azure & DevOps
R	PowerBI/Tableau
PySpark	OR-Tools
MongoDB	Google Analytics

Analytics and Math
- **Statistics** - Hypothesis testing, experiment design & EDA
- **Regression**
- **Classification** (Decision Trees, random forest/ XGBoost)
- **Neural Networks/Deep Learning** – LSTMs and Natural Language Processing

Business
- Problem Solving
- Story Boarding
- Agile Management
- Stakeholder Management

ORG INITIATIVES
- Trainer for internal teams on modeling

HONORS

Awards
- Award for technical capability, leadership & accountability

Publications
- Optimizing Stock market prediction using LSTM networks
- Social media data analysis twitter sentimental analysis
- Feature selection effects on classification algorithms

EDUCATION

B.E, Computer Science
Veltech Technical University
2015 – 2019 - **GPA 9.26/10.00**

Secondary Education – CMS
CISCE - XII - 92% | X : 86%