CV

Data Science

Abstract

This is an abridged version of the full CV , and concentrates on the last 20 years of my career which has focused on more technical aspects of Modelling, Statistics and Data Science. The first 20 years I practiced as an Engineer in the microwave radar and radio fields

Graham Bortz (Bortz Analytics/DMSA Consultant)

Gbortz27@gmail.com

GRAHAM BORTZ (BORTZ ANALYTICS/DMSA CONSULTANT)

GOAL

To become leader in :

1) Advanced analytics consulting and training
2) Modelling
3) Visualization

SKILLS & ABILITIES

- Advanced Predictive Analytics
- R Programming (Advanced)
- Power BI based Modelling using R / Reporting / Dashboarding
- **SQL (Intermediate)**
- Visualization Techniques ®
- Excel Financial Modelling
- Scenario Analysis / Forecasting

EDUCATION

MBA – Heriot-Watt (Edinburgh)

Masters (MSc Eng) – Pretoria University

Honours (Eng) – Pretoria University

Hons. in Operations Research -(Unisa)

BSc Eng. - Wits University

ID : 6005275072083

T +27832121910

E gbortz27@gmail.com

DATA SCIENCE ORIENTED EXPERIENCE

BORTZ ANALYTICS (SOLE PROPRIETOR) AND DMSA CONSULTANT/JHB
POSITION: SENIOR CONSULTANT (DMSA)
(MARCH 2017 – PRESENT)

- **Campaign Design** (Telco, Banking and Insurance)
  - o Behavior-Based segmentation using advanced visualization and statistical techniques (clustering and PCA)
  - o Modelling for scenario analysis using visual techniques and algorithms (Power BI)
  - o Performance Measurement and campaign parameter optimization (linear programming)
  - o Lift Modelling

- **Gaming Industry (As DMSA Consultant)**
  - o Offer design based on analysis of play
  - o Clustering of Players based on Play / Segmentation
  - o Performance measurement
  - o Experimental Design

- **Health Care Analytics (As Bortz Analytics)**
  - o Bed Occupancy (Length of Stay) Analysis (SQL, R)
  - o Forecasting Length of Stay / Re-admissions (SQL, R)
  - o Development of Interactive Dashboard Solution to Facilitate Exploratory Data Analysis

- **Project Management (As Bortz Analytics)**
  - o Multichoice MAM System Upgrade
  - o Highly Complex Implementation Project
  - o Successful Implementation of New Media Asset Manager

- **IOT Technology Project (As Bortz Analytics)**
  - o Detected abnormal behaviors in Automotive Workshop
  - o Motivated behavior modification based on projections
  - o Measured improvements and motivated for more detailed data capture and processing
  - o Achieved greater efficiencies through iterative refinements

- **Analytics Course Design (As DMSA Consultant)**
  - o Machine Learning (Supervised and Unsupervised)
  - o Credit Modelling
  - o Fraud Detection / Anomaly Detection
  - o Interactive Visualization

- **FMCG Shelf Optimization Analytics (As DMSA Consultant)**
  - o Data extraction and exploration
  - o Scenario Analysis and Experimental Design

GRAHAM BORTZ (BORTZ ANALYTICS/DMSA CONSULTANT)
POSITION TITLE

DELOITTE CONSULTING , SANDTON
POSITION: SENIOR MANAGER ADVANCED ANALYTICS
(FROM NOV 2014 to FEB 2017)

- **Campaign Design** , Implementation Contract (Mobile/Telco)
  - *Problem was stagnant or little subscriber growth*.
  - Analysis of existing product design and performance
  - Subscriber behavior modelling
  - Time pressures constraints on design and launch limited options to modification
  - Prediction of behavior and forecasting take-up
  - Scenario Analysis with Price-Elasticity and Propensity usage Modelling, Risk Analysis (Monte Carlo Simulation)
  - Operationalizing the campaigning , overall of current methodology
  - Data mart optimization for fast extraction of insights
  - Influence in all dealings with touchpoints , websites , call centers, face-book , advertising (OTL / BTL) , messaging design and interactions(SMS)
  - Analysis of results and campaign modifications
  - Design of Experiments
  - Resulted in significant usage and adoption with positive revenue impacts (20% Revenue increases , churn reduction)
  - Testing methodologies and execution.

- **Advanced Text Analytics in the Supply Chain**
  - *Problem was unifying the Bill of Materials Descriptions which, due to spelling errors were being classified incorrectly*.
  - Advanced Regular Expression techniques resolved many issues leading to significant savings and cost reductions.

- **Pattern Identification and Remediation** (Billing / Collection Systems)
  - *Problem: A large utility was struggling to determine why its billing and payment collection behavior was out of alignment. This resulted in a large and increasing "aging position."*
  - Advanced pattern recognition (time series based) was conducted to identify problems and motivate for the correct remedial action.
  - Once these abnormal behaviours were identified very simple remedies were introduced ; focus on the right bill amounts at the right time intervals made the collection process more efficient, resulting in lower 90days + debtor ratios. Cost savings estimates were based on effective loan reductions (interest savings on outstanding loan amounts)

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POSITION TITLE

MTN (JOHANNESBURG)
POSITION(2) (BUSINESS STRATEGIST / SEGMENTATION ANALYST)
(FROM SEPT 20O5 TO OCT 2014)

Business Strategist:

New Technology Investments

Challenge was to prepare for the introduction of new Mobile and Fixed Technologies.

WiMax, Radio Transmission , Mobile TV and New Pricing Technologies were being offered to MTN , and I conducted feasibility studies including scenario analysis and forecasting the viability of introducing these technologies. Financial modelling of these technologies was also conducted to assess the most optimal timing of their introduction.

Data Scientist :Advanced Analytics

New Pricing Strategies:

Challenge was to provide new pricing strategies to lift acquisitions and retain customers.

As a business strategist I was tasked to investigate the feasibility of implementing dynamic pricing in the prepaid segment of MTN's market.

This was achieved through modelling scenarios where innovative pricing algorithms would be implemented at various times and at various places in the network to increase affordability of making calls to those that needed it. Once the business case was approved , my role became more analytical whereby it became essential to implement algorithms to control the price based on the individual calling and the time of day and geographic location. My algorithm was patented for MTN Africa Wide. It was the first implementation in a telco network in the world , achieving churn reductions of 4% relative to other price plans with significant migrations, at one time 2/3rds of all prepaid subscribers were on this price plan ; many new acquisitions were achieved. It is still a predominant offering in the market today.