DATA SCIENCE LEAD CONSULTANT

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Summary

Around 10 years of data science experience with proven record of designing, developing and implementing solutions from poc to product. Lot of my work has resulted in significant impact in terms of accelerating efficiency, enhanced revenues and identifying new opportunities. In my recent engagement, I have been working closely with **top 4 Pharma clients** to drive **Digital and AI initiatives** in space of **R&D, Commercial and Medical Affairs**. Highly efficient results driven and problem-solving attitude to effectively develop and manage relationships between the company and its stakeholders. Having a strong analytical background and experience in AI and Data Science has helped me understand stake holder's problems and objective clearly and enable me to develop solutions to business problems effectively.

Highlights

- **Data Science Solutions:** Leading solution design and implementation in area of Portfolio Strategy, Research and development Marketing, Competitive Intelligence, Forecasting, Bio Medical Research, Primary Market Research & Medical Affairs using
    - Predictive Modelling (Next Best Physician Recommendation using Genetic Algo, Next Best Targets REP AI using Xgboost and Shapely etc.)
    - Bayesian Modelling (Predicting HCP level sales based on brick level sales for Physician Targeting by Sales force)
    - Natural Language Processing (Q/A, Summarization, Language Modelling, Sentiment Analysis etc.)
- **Building Tools for Pharma:**
    - Building tools to accelerate work for R&D clinical practices and solve for age old clinical trials problems like improving trial designs, site matching, patient enrollment and understanding patient burden role in drug development in collaboration with Tufts university
    - Building tools for PTRS (probability of technical and regulatory success) to help client come up with better estimation of molecule success and prioritizing trials
- **Simulation & Explainable AI:**
    - Epidemiological modelling during Covid phase for predicting number of Covid cases using curve fitting approach and solving for first order differential equations
    - Agent Based Simulation: Modelling pharma -payer -provider interaction to understand pricing strategy
    - Tree Based, Structural Causal Modelling & Perturbation based Sensitive analysis of features in predictive modelling
    - Explainable Models for business using game theory based Shapely values
- **Data Sources:**
    - **Clarivate, Symphony, Iqivia, Trial Trove, Clincal.Gov, BioMed Tracker, Optum (EHR – HIPPA Compliant, Payer Data)**
- **Account & Team Management:** Managing clients across USA and leading cross department teams
    - Managing overall year to year accounts worth **~ 2-3million USD**
    - Building an enterprise grade Data Science Team focused on scalable solutions that drive business outcomes. Currently managing a team of 5-6 Data Scientists, 3-4 Data engineers and 1-2 UI/UX designers

Experience

1) **ZS Associates, Advanced Data Science Group, Mar- 2018 to Present (Data Science Consultant)**

- **Structured Data Sources**
  - Designed, Developed and Deployed an integrated clinical design intelligence tool for helping multiple pharma clients providing better landscape for designing clinical trials.
  - Designed and Developed Dynamic Targeting system for sales force using sales, claims, marketing, calls data for customers. Multi objective optimization is combined with Xgboost model for producing most relevant targets in forthcoming months or quarters. System is currently being used in Top Pharma Companies
  - Genetic Algorithm and custom segmentation model for predicting the best sequence of actions popularly known as Next Best Action for customers
  - Agent Based simulation to understand interaction of multiple agents in Pharma market, driving Profit, Market Share and rebating strategies**.**
- **Unstructured Data Sources**
  - Designed, Developed and Deployed an integrated clinical design intelligence tool for helping multiple pharma clients providing better landscape for designing clinical trials
  - Natural language inferential modelling for getting contradiction and entailment scoring for a given assumption. Idea behind the modelling is to understand market response for any given products' assumption

2) **Mosaic ATM, Virginia, USA – (Data Scientist) July 2017-Dec 2017**
   - Developed Email Spamming engine for a healthcare group for not missing out any critical emails containing critical information about supply chain logistics etc.
   - Build Anomaly detection systems for finding anomalies in production rates for multiple products for one of the semiconductors making giant – Texas Instruments.
3) **Optum, INC - India (Research and Advance Analytics Engineer) 2013-2016**
   - Helped building fraud detection engine for auto adjudication of claims using real word data from optum payor data source. Ensemble of models from parametric and non-parametric frameworks were used. System has the capacity to separate out fraudulent claims automatically and stopped the processing for those claims, saving around millions of dollars every year.
   - Built HIPPA compliant data pipeline Using EHR data, to be absorbed by the machine learning models and downstream applications for analytics services.
4) **Birla soft Pvt LTD- India (Data Analyst) -2010-2013**
   - Performing business analytics using python and R programming for business users and helped creating several dashboards for the executives
   - Performing various statistical tests for accessing data quality, data anomalies, data drift and model drift

Education

- **George Washington University –** Master's in data science 2016-2017
- **Jamia Millia Islamia –** Electronics and Comm (2006-2010)

Skills

- Library & ML frameworks: TensorFlow, pytorch, Scikit, Pandas, NumPy, Cv2, Matplotlib, dplyr, Tidy, data. Table, ggplot, rshiny
- Cloud ML Stack: AWS cloud ML, Sage Maker, Google Cloud ML, Vision and NLP APIs
- Programming Skills: R, Python, Pyspark, Sql, Julia

Certifications

- Graham School, University of Chicago – Drug Development Process
- Survival Analysis in R – Imperial College London (Coursera)
- Bayesian Statistics – Duke University (Coursera)
- Specialization in Deep Learning – Deeplearning.AI (Coursera)
- R Programming – John Hopkins (Coursera)