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Enrich

Accelerated ML Engineering for an E-commerce Company

a whitepaper

scribble Data

Introduction

A leading e-commerce apparel brand in India, founded in 2011, features both international and local merchandise in children's apparel. As a growing business, they have several opportunities to make data model-driven decisions, to meet a number of business objectives, including lowering cost of customer acquisition and increasing their lifetime value.

As their growth increased, they felt the need to better the shopper's experience by improving how the product listing is showcased. They approached Scribble Data to build their data intelligence platform (DIP), that would enable the nimble development and deployment of multiple such data science initiatives (driven by data models), all of which were closely tied to their bottom-line.

Scribble Data used the Enrich platform as the foundation for the customer's **Data Intelligence Platform**, on which multiple datasets were continuously computed, and used to both train and feed end models. Two of these models are discussed below:

Product Listing Optimization:

The Product listing page is fundamental to the customer's business - it determines the assortment of products that customers get to see. Show your worst products, and lose the sale. Show only your best ones, and run the risk of them cannibalizing the rest of the product catalogue. The challenge was not in the finding of a balance between the two ends of the spectrum, but rather, building an underlying set of computations that would provide the customer with 'levers' that they could then play with, as their business objectives evolved. Scribble's Enrich platform is used to compute various second and third order features (derived variables) that accounted for user behavior (clickstream), product catalogue, and inventory levels, to give the customer a path to deploying multiple product listing page paths as the business objectives evolved. The new product listing optimization model was structured based on the customer's search history, ordering and reordering pattern, with the help of selected features of the Scribble Enrich platform.

Re-ordering:

As ordering is driven by the purchase process and by experience, and re-ordering is based on sales velocity, the customer was looking to build an ML model to optimize re-ordering factoring a number of constraints, such as vendor contracts, discounts offered on bulk indenting, delivery times, stock-outs, time-to-replenishment, among several others.

The existing algorithm for reordering was improved upon by framing the problem, analyzing the data and existing code, and proposing an improvement, inserted at the appropriate layer within the existing production system. At the same time, a deeper understanding of both the consumer and the products themselves, was developed. This understanding was used to build a nimble collection of features used for both preliminary problem framing as well as training the model. These features needed to evolve quickly as the data science understanding of both the problem as well as the solution evolved.

The Approach:

Scribble Data incrementally developed components of the client's Data Intelligence Platform, using the Scribble Enrich Platform as the underlying engine.

Selected capabilities of Enrich were used to accelerate the development of each of the ML models that were produced. This allowed the output to be continuously computed when ready for consumption by the data science function, and the application team.

Result:

The Client needed a platform that would enable the quick build, and deployment of a number of different data models. Using Scribble Enrich as the underlying platform gives them not just the acceleration needed to get their data science function revving, but also the confidence in the computation of the underlying datasets, so that there is method and control to the models that they deploy. In turn, this gives their end shoppers a better experience and improves the company's bottom-line on an ongoing basis.