

SELLER EXPERIENCE

Demand forecasting

Forecasting demand of products is critical for ensuring Amazon can optimally meet its customers' demand. Accurate forecasting also helps streamline inventory planning and warehouse resource management. At Amazon, the problem of demand forecasting is exacerbated by presence of millions of products, short shelf-life of products, new merchants joining the platform, and strong seasonal effects. Moreover, in India, region specific festivals and regional demand make the task of forecasting even more challenging. We employ state-of-the-art Deep Neural Network based models that can provide multi-quantile and multi-horizon forecasts, while allow us to address these challenges.

Advertising Relevance

Native advertising is an important avenue for sellers to promote their merchandise, and is a great revenue source for Amazon. At IML, we develop ML models to improve a customer's browsing experience by ensuring relevant advertising. We are building models to predict probability that a customer will click on a product when searching, and estimate relevance of a product to the search query. Not only do these models have to operate on a large-scale of query and product combinations, but they also have to adhere to strict latency constraints. We use factorization machines and embeddings generated by advanced deep learning based models to solve these problems.

Product Quality/Safety

Preserving customer trust is one of the central tenets for our business, and our mission is to ensure that customers receive safe products while providing all qualified sellers and vendors an opportunity to sell these products. To achieve this mission, we are building high-precision ML

models to detect and predict any safety related concerns that may arise due to individual offers on our platform. The problem is difficult due to the presence of sparse training data with infrequent positives, and high-precision requirements for carrying out automated actions. We are working towards building active-learning based and multi-task learning models to counter these challenges.