Propensity US: Planning to Buy Car-Truck

Tools to integrate, analyze, visualize, and deliver actionable insights in real time.

Challenge

As marketers are seeking privacy compliant options for customer engagement, especially in these times as Covid-19 is driving changes in consumer behavior, Prosper Insights & Analytics offers a solution to help advertisers and marketers create direct to consumer marketing campaigns in a cookie-less world.

Solution

Prosper's pre-trained machine learning buyer propensity models offer a solution to generate improved marketing a privacy compliant way. These classification models are created and deployed in Amazon SageMaker with input from over 32,000 real pandemic consumers. They easily integrate with your customer data.

Product overview

Prosper Insights & Analytics is a consumer data and analytics company that is now using Amazon SageMaker built-in XGBoost algorithm to create consumer propensity models. Prosper's approach to accessing their models on AWS Marketplace provides clients with the ability to enhance and enrich customer data in a privacy compliant way.

Prosper Insights & Analytics' Propensity US: Planning to Buy Car-Truck model predicts the probability that a U.S. adult consumer is planning to buy a car or truck. Based on a set of basic demographics, the model identifies individuals who are likely to have the health condition. The model was trained with data from Prosper's large US Monthly Consumer Survey study (N=24,000).

Product Features and Benefits

- Enhances digital and offline targeting by identifying individuals likely to purchase products or services.
- 100% Privacy Compliant Models. No PII Used. HIPAA compliant.
- Based on unique large sample consumer survey data (N=24,000)
- As the Covid-19 Pandemic is forcing changes in consumer behavior, Prosper's Sagemaker model offerings improve personalization and offers by behavior propensities that are 100% privacy compliant with CCPA and HIPAA.

Case Study

Use Case: Marketers seeking to find customers impacted by the Covid-19 pandemic drivers such as work from home, concern in public spaces, restaurants, stores, gyms, etc.

Solution: Deploy Sagemaker Models in real time via AWS. See Prosper models

Results: Improved marketing ROI. Lift over Random ranges from 1.20 to 3.43 times

How it works

Sagemaker studio solves this challenge by providing all the tools needed to build train and deploy models with different algorithms, datasets, and parameters. In a few clicks, you can spin up a new machine learning model when launching Amazon Sagemaker Autopilot. Autopilot iteratively trains dozens of models at once and then puts the best sets on a leaderboard ranked by accuracy.

You can dive into any of these individual models and inspect their features and then deploy the best one for your use case with a single click. After deployment, you can oversee model quality using Amazon Sagemaker model monitor. At any point, if problems are detected, you will receive an alert so you can retrain the model as needed. With Amazon Sagemaker studio, you can pull the tools used in traditional software development such as debuggers and profilers into a single pane of glass to build train and deploy machine learning models at scale.

Prosper Insights & Analytics Workflow for associating inferences with input records
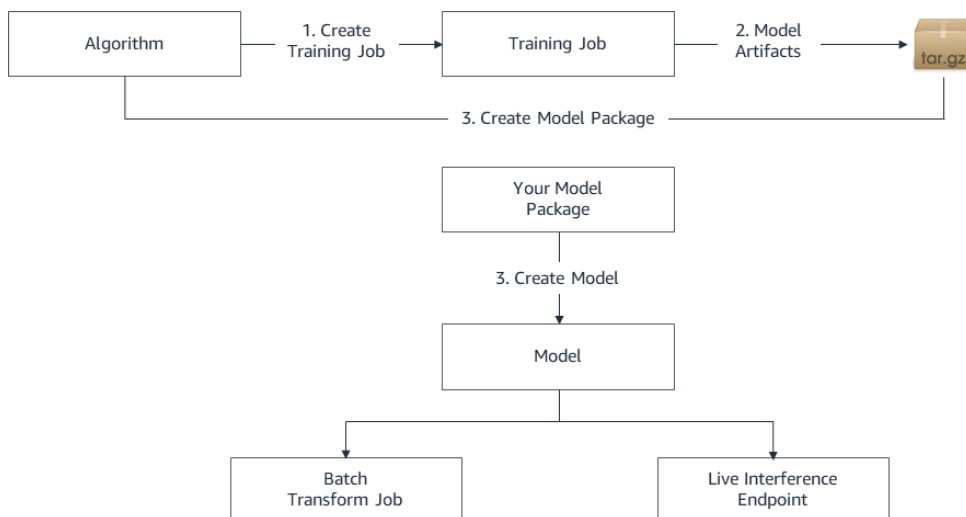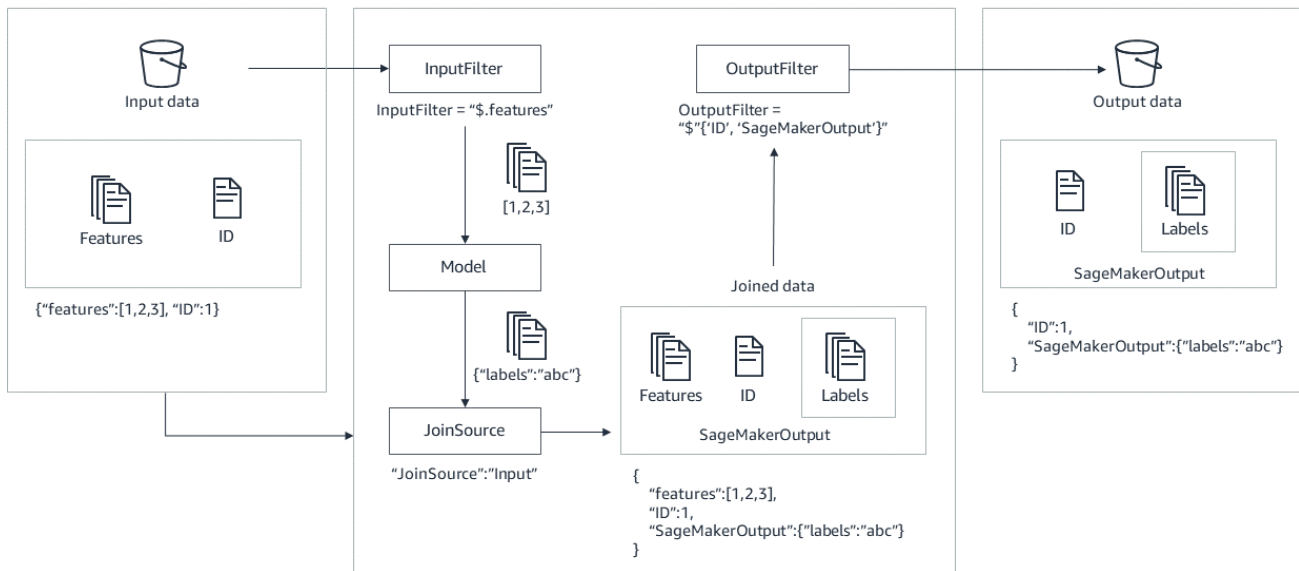
XGBoost Algorithm used to create the US Propensity model

The XGBoost (eXtreme Gradient Boosting) is a popular and efficient open-source implementation of the gradient boosted trees algorithm. Gradient boosting is a supervised learning algorithm that attempts to accurately predict a target variable by combining an ensemble of estimates from a set of simpler and weaker models.

The XGBoost algorithm performs well in machine learning competitions because of its robust handling of a variety of data types, relationships, distributions, and the variety of hyperparameters that you can fine- tune. You can use XGBoost for regression, classification (binary and multiclass), and ranking problems.

You can use the new release of the XGBoost algorithm either as an Amazon SageMaker built-in algorithm or as a framework to run training scripts in your local environments.

This implementation has a smaller memory footprint, better logging, improved hyperparameter validation, and an expanded set of metrics than the original versions. It provides an XGBoost estimator that executes a training script in a managed XGBoost environment.

The current release of SageMaker XGBoost is based on the original XGBoost versions 0.90, 1.0, and 1.2.

How CloudQuant predicts macroeconomic factors early using Prosper Insights & Analytics

Challenge

CloudQuant tasked its AI researchers to predict global macroeconomic factors three to four weeks ahead of the actual government release dates. The company has connected over 13,000 alternative datasets to its alternative data fabric and analytics tech stack.

Solution

CloudQuant used Prosper data to refine its predictive models to more accurately predict the Consumer Price Index (including CPI sub-components), Non-Farm Payroll, Housing Starts, Average Hourly Earnings, Advance Retail Sales, and Person Consumption.

Outcomes

• Predicted (with Prosper data and other publicly available data sources) a variety of important economic factors with a useful degree of accuracy prior to government release of data.

• Helped traders to make decisions 24-48 days before the official data was released by the government which improved their ability to outperform overall market.

• Demonstrated ability to predict directional change in these economic factors of 63.1% directional accuracy for CPI.

CloudQuant
Alternative Data - Simplified

About CloudQuant

CloudQuant is a Commercial Data, Research, and Technology Company serving global financial services and corporate clients.

Prosper
INSIGHTS & ANALYTICS™

About Prosper Insights & Analytics

Prosper Insights & Analytics is a global leader in consumer intent data serving financial services, marketing technology, retail and marketing industries. By integrating Prosper's unique consumer data with a variety of other data, including behavioral, attitudinal and media, Prosper helps companies accurately predict consumers' future behavior and optimize marketing efforts and improve the effectiveness of demand generation campaigns.

" Using Prosper's data to supercharge predictive analytics is a perfect example of working smarter rather than working harder. Sourcing the right alternative data from AWS Data Exchange and simplifying integration to existing processes with CloudQuant Liberator™ data fabric is the key differentiator for success. "

Morgan Slade, Founder and CEO, CloudQuant

Additional Resources

• [Prosper Model Factory Overview](#)
• [Prosper Model Factory Catalog](#)
• [Use Case: CloudQuantVideo](#)

Solution available in [AWS Marketplace](#)