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SageMaker Canvas & AutoPilot Tour

Executive summary

ML adoption in the midwest is not as prominent as it is in tech hubs in the US. Our goal was to move the needle towards increased AI/ML adoption in the midwest. We accomplished this by expanding our training sessions to over 2,000 IT professionals while contributing to the Prudential Life solution. Individuals attending saw how simple and easy it can be to use AWS SageMaker Canvas and AutoPilot to try out thousands of model and parameter combinations. They were able to experience first-hand how results take hours, not days and weeks.

The challenge

> ### Showcase predictive power of features related to insurance risk
> By understanding which features contribute greatly to life insurance risk, we are able to help make the application process more efficient, improving the customer experience.

> ### Making AI/ML Solutions accessible
> The Midwest lacks AI/ML adoption. Our goal was to increase awareness of easy to implement solutions to help the area grow in the space.

> ### Demonstrate comparable results as human-trained models
> Showcase the value of handing over tasks to cloud compute, freeing up individuals for more exploratory work and analysis without giving up accuracy and effectiveness.

Why choose AWS for your machine learning (ML) needs?

With high-performance compute options powered by machine learning, Amazon Web Services (AWS) enables organizations to undergo broad digital transformations with modern, cloud-native solutions. Offering a broad set of ML services and supporting cloud infrastructure, AWS enables organizations to tailor their ML solution to meet the unique needs of their business.

About **Prudential** Life

Prudential Life is a company whose subsidiaries provide insurance, retirement planning, investment management, and other products and services to both retail and institutional customers throughout the United States and in over 40 other countries.

" By the end of 2024, 75% of Enterprises will shift from piloting to operationalizing AI." - Gartner

" ML isn't the future anymore. ML is critical to innovation today."
-Dr. Bratin Saha, VP AI & ML, AWS, 2021

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Why Source Allies?

Founded in 2002, Source Allies is a premier, team-based, technical consultancy in Des Moines, Iowa. We provide high-performing coaches and teams who work alongside our partners to cultivate a shared ownership environment. We are dedicated to our partner's long-term success and focus on continuous value delivery while remaining flexible to our partners' dynamic business needs. Our mission is to combine the skills of data science/data analytics/statistics with software development skills and best practices (TDD, data engineering, MLOps, cloud architecture) in order to incorporate the right skills into product teams so that we can answer tomorrow's questions without redesign.

The solution

Our solution involved the presentation of AWS Sagemaker Canvas and AutoPilot tools to over 2,000 IT Professionals across the midwest. By walking through an example using Prudential Life data, we were able to show them how to train, test, and deploy a machine learning model to the cloud. We dived into our data cleaning process as well as the ease of using AutoML to train hundreds of models with thousands of parameter combinations, resulting in a much quicker way to reach a production-ready model. AWS SageMaker Clarify was used to generate a report showing the explanation of the model's predictions. The model selected was an XGBoost model that was then deployed to a SageMaker Endpoint for inferences. We were able to use these real-world examples to show how effective AWS SageMaker is at coming up with a solution that matches human-made models and can save engineers hundreds of hours in development time allowing them to focus on harder problems and more solutions.

Results

AWS SageMaker Canvas allowed IT professionals without significant coding experience to prepare and explore datasets, lowering the bar for entry and making it more accessible than ever before. AWS SageMaker Clarify enabled us to deliver explainable model reports, making the models understandable for those not involved in the process day in and day out. AWS SageMaker AutoPilot helped demonstrate the effectiveness of the cloud service's ability to quickly iterate across several models and parameters to clearly output the best options for deployment. Over 2,000 IT professionals walked away from the experience with an in-depth understanding of the benefits AI/ML can provide their businesses and save them money and time across the board by deploying to the AWS environment. This results in 10x increase in team productivity and over a 50% decrease in TCO.

" The cost to train a neural network equivalent in size to the human brain ($2.5B) is likely to drop to $600K by 2030." -ARK Investments

Benefits

Over 2,000 individuals in the midwest have now been trained on AWS SageMaker Canvas, AutoPilot and other ML related services. They learned first-hand how hundreds of hours of engineers' time can be reduced for the purposes of ML model creation. This experience allowed many businesses in the Midwest to get up to speed on AWS ML capabilities and showed them that they too can deploy models to the cloud. This has further advocated for more areas to incorporate machine learning into their daily practices and teams, creating a collaborative environment where data scientists interact with data engineers and subject matter experts constantly resulting in a better product and a reduction in defects.

Next steps

As with any algorithm, the job is never done. Next steps include additional hyperparameter tuning to increase the accuracy of the model. In addition, there is opportunity to create a more robust model by finding additional outside datasets to compliment the original data set. Additional model enhancements are also on the horizon. With the recent release of Amazon SageMaker's ability to support ensemble models, we see greater improvements to come from incorporating this into our solution.

Benefits

> **Trained over 2,000 individuals on SageMaker AutoPilot**
> Lowered the barrier to entry when it comes to deploying ML models on cloud infrastructure.

> **Demonstrated time-savings associated with AWS SageMaI**
> Brought awareness to new key features of SageMaker Autopilot in a professional setting showing time savings of hundreds of hours of ML engineers.

> **Made learning SageMaker and cloud technologies more ac**
> Running each analysis cost $3,000-$4,000, but being able to present this information and walk through it as a group allowed the cost to only be $6/learner

About Source Allies

We partner with privately owned small businesses to fortune 100 organizations. We have received the Migration & Modernization Competency and applied for the Machine Learning Competency in 2022. Our teammates are certified in: Data Analyst Specialist, Professional Solutions Architect, Professional DevOps, SysOps Administrator, Machine Learning Specialty.

aws
PARTNER
Advanced Tier
Services

· Migration Services
  Competency