Deploying Machine Learning models faster and more reliably with MLOps

Advancing Analytics were commissioned to help an Insurance partner standardise their approach to Machine Learning, by implementing a state-of-the-art cloud Data-Science-As-A-Service platform.

SITUATION

An Insurance Partner with a large multi-national federated analytical estate sought a conformed Machine Learning platform inorder to accelerate the adoption of Machine Learning.

Spread throughout the organisation, the Data Science capability and maturity varied significantly from team to team.

Each team adopted their own approach to Machine Learning which lead to a fragmented, expensive and unsupportable solution prone to failure.

The Insurance Partner needed a single cloud platform which could offer an automated Data-Science-as-a-Service architecture.

The environment needs to support all analytical users and meet them at their current skill level, whilst being suitable for both real-time pricing workloads as well as offering deep analytics using Machine Learning.

APPROACH

Advancing Analytics deployed their team of Machine Learning Architects and Data Engineers to devise the best Machine Learning architecture to meet the goals of the business.

Machine Learning is still emerging in most organisations. It is unrealistic to expect every Data Scientist to build models in the same languages using the same frameworks and techniques. The best team, is a multi-faceted team comprised of different skills and experience levels.

To support multiple analytical teams, they needed a platform which would support the following key requirements:
- Machine learning over all sizes and speed of data
- A scaled out environment to support both batch and interactive Machine Learning
- Catering for the advanced user, while having the capability to support those who are just starting their data science journey.

Our approach was deployed on Microsoft's Azure Cloud Platform. The platform takes advantage democratising aspects of Azure Machine Learning to support both the casual user and the power user. Azure Databricks is used in conjunction with AML for scaled-out batch and real-time models. The platform is continuously deployed using Azure DevOps, to allow the Data Scientist to focus on model development. Models are managed in production using a combination of MLFlow and the Rendezvous approach to Machine Learning model deployment.

ADVANCING ANALYTICS

OUTCOME

Advancing Analytics worked in collaboration with the business, to build a platform which was not only suitable for the business challenge but would also provide the Insurance partner with a competitive advantage through the rapid deployment of real-time pricing, fraud and optimisation models.

- Advancing Analytics are a collaborative-code consultancy. There was a significant transformation and upskilling achieved by the Insurance Partner's team, setting them up to achieve an ROI earlier, and become more proactive.

- Advancing Analytics developed a state-of-the-art Machine Learning Platform - enabling Machine Learning in the cloud and abstracting the complexities of model deployment using MLOps, container-based deployments and Machine Learning pipelines.

- The Insurance Partner was able to:
  - Collaboratively build a platform which supports multiple development languages and approaches (batch, interactive and streaming)

  - Take advantage of pre-built Advancing Analytics accelerators to rapidly deploy a production environment and a repeatable way

  - Take a holistic view of the end-to-end Machine Learning lifecycle, using granular monitoring and alerting to track where a model has begun to decay, and intervene with automated re-training

  - Simplify the path to production with MLOps and Azure DevOps

- Advancing Analytics helped the partner get the team, processes, structure and operating model in place to design and deploy advanced analytics models and AI in production

ABOUT ADVANCING ANALYTICS

We are a consultancy based in the UK who help global clients meet their *Advanced Analytics* objectives. We focus on Microsoft technologies and specialise in solving problems using Microsoft Azure and Databricks. By championing modern technologies, we are helping move the industry forward, either applying deep data engineering techniques or innovative data science solutions, we combine the best of both worlds for our customers.

"We'd never have got as far in so short a time without your help"

Microsoft Partner

Gold Cloud Platform
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Gold Data Platform
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Silver Project and Portfolio Management

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