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Gaming Platform Powers Its Game With a Machine Learning Model

Case Study

Overview

Bringing into play ML capabilities

An online gaming company, at the forefront of the gaming revolution for over three decades, wasn't satisfied with the performance of its existing player churn model. It consulted with Zensar to explore a new approach.

Zensar's brief:
Design and deploy a machine learning (ML)-powered first-session churn model that delivers on these two priorities:

- Identify players at risk of churning.
- Fine-tune player retention strategies.

Beyond the brief:
Guided by our commitment to "experience-led everything," we ensured that our focus was not just on technology, but more importantly, on the people who use it.

Challenges

Alarming rate of player churn

The client's in-house team was concerned with the alarming rate of player churn. The existing churn model had limitations in accurately identifying players at risk of churning after their first session. This resulted in missed opportunities to engage and retain players, ultimately impacting revenue.

It was time to consider multiple new models with higher precision and enable the promotion manager to implement targeted retention strategies effectively.

Solution

Application for first-session churn prediction

As our client's technology partner, we collaborated with the organization's in-house team every step of the way through the solution deployment process.

Discovery: We started the engagement by collecting relevant data from the gaming platform with the goal of identifying the most relevant features for predicting churn:

- **Gameplay data:** Actions, session durations, achievements, and in-game purchases
- **Demographic data:** Age, location, and other attributes
- **Engagement metrics:** Interaction with community features, play frequency, and social connections

Planning and execution: With the insights from the discovery process, we planned and executed various stages of the solution:

- **Development:** We developed, trained, and evaluated multiple models using a combination of training and validation datasets. The models included logistic regression, random forest, gradient boosting, and neural networks.
- **Integration:** After comparing the models, we chose the one that delivered the best accuracy and integrated it with the gaming platform to enable real-time predictions.
- **Monitoring:** The performance of the model is continuously monitored to make necessary adjustments and increase accuracy.

Enablement: We leveraged these key enablers to implement the solution:

- **Real-time streaming:** Kafka service integrated with Dapr was used for enabling real-time data streaming, as it ensures efficient, scalable, and reliable event-driven data processing across distributed systems.
- **ML model development:** Azure Databricks was used to provide a collaborative, scalable, and efficient environment for building, training, and deploying an ML model.
- **Inference endpoint deployment:** Azure ML Studio was used for deploying inference endpoints, as it provides a scalable, fully managed solution for real-time model serving, ensuring efficient and reliable performance.
- **Data storage:** A Federated Data Lake (FDL) was used for data storage, as it enables seamless access and analysis of diverse data types across multiple storage systems, enhancing data management and search efficiency.
- **Logging:** Elasticsearch was used for logging, as it provides scalable, real-time search and analysis capabilities, enabling efficient troubleshooting and monitoring of system logs.
- **Alerting and monitoring:** Azure Application Insights was used for setting up alerts and monitoring, as it provides real-time insights and proactive notifications to ensure optimal application performance and reliability.
- **Networking:** Azure networking services were used, as they provide secure, scalable, and high-performance connectivity solutions for hybrid and cloud-based applications.
- **DevOps implementation:** An Azure DevOps pipeline was implemented for deployment, as it automates and streamlines the CI/CD process, ensuring faster, more reliable, and consistent application delivery.
- **Computing and scaling:** Azure Kubernetes Service was used for load balancing, compute, and scaling, as it provides automated, scalable, and efficient management of containerized applications, ensuring high availability and performance.

Impact

Scalable success

- **Improved precision:** The new churn model enables higher precision, resulting in timely interventions for at-risk players.
- **Actionable insights:** The insights provided by the model helps implement personalized in-game rewards and promotions for at-risk players and develop community engagement initiatives to retain players.

Business outcomes: The solution's AI-enabled real-time predictions inform immediate actions that boost business agility. To top it off, its capability to efficiently handle large datasets enables easy scalability.

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An RPG Company

At Zensar, we're 'experience-led everything.' We are committed to conceptualizing, designing, engineering, marketing, and managing digital solutions and experiences for over 145 leading enterprises. Using our 3Es of experience, engineering, and engagement, we harness the power of technology, creativity, and insight to deliver impact.

Part of the $4.8 billion RPG Group, we are headquartered in Pune, India. Our 10,000+ employees work across 30+ locations worldwide, including Milpitas, Seattle, Princeton, Cape Town, London, Zurich, Singapore, and Mexico City.

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