

Case study: products recommendation system for L0i ecommerce.

Clients obtain more effective product recommendations according to personal profile.



About LOi

LOi is the most important uruguayan online retail store, with more than 15 years of experience bringing all kinds of products to customers all across the country.

About Netlabs

Open Source Boutique Company with more than 20 years of experience, specialized In DevOps, Big Data/AI, SRE/Cloud and High Performance Scalable Systems for e-government, telco and tech startups.





Challenges

- Analysing data to understand what is needed to make a good recommendation
- Building data pipelines to get to last users interactions



Keys to Success

- Using Amazon Personalize, AWS Glue and Amazon SageMaker
- Automated data ingestion and model building
- Collaborative work of Netlabs and LOi for understanding systems needs



Results

- ML system for personalised products recommendations with up-to-date users interactions
- Better user experience at LOi ecommerce



The challenge

With the objective of delivering a better homepage and product discovery experience, L0i planned to develop a product recommendation system that could present users the products they would like to buy.

The challenge was to develop a system that would recommend similar items to help users easily find what they are looking for based on their shopping history. This would also help customers discover products faster and quickly find relevant new products.



Recommendation System

The main component of the recommendation system is Amazon Personalize. It enables developers to build applications with the same machine learning (ML) technology used by Amazon.com.

In this case, it was used to build a model that could make product recommendation based on items that the user already bought, added to cart or liked. Amazon Personalize is a fully managed machine learning service that goes beyond rigid, static rule-based recommendation systems and trains, tunes, and deploys custom ML models to deliver highly customized recommendations.



Amazon Personalize provisions the necessary infrastructure and manages the entire ML pipeline, including processing the data, identifying features, using the best algorithms, and training, optimizing, and hosting the models.

The recommendations are obtained through an API with the SDK (as L0i already did on other parts of their site), paying only for what it is used.

The model is updated frequently with new users, products and interactions between them.

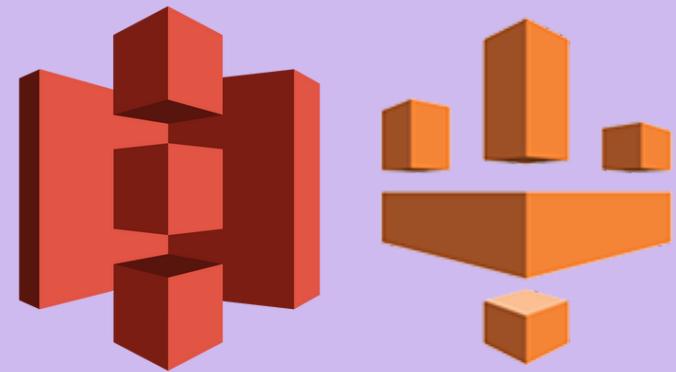


Data analysis, exploration and transformation

Before making the Amazon Personalize model, data needed to be analyzed and transformed to make it suitable for model training. Amazon SageMaker was used to explore and make data analysis.

One of the benefits of SageMaker is to make ML more accessible. It enables more people to innovate with ML through a choice of tools-integrated development environments for data scientists and no-code visual interfaces for business analysts.

It helped to prepare data, label, and process users, products and their interactions before training the Amazon Personalize solution.



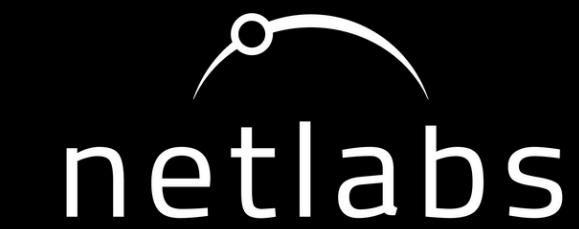
Data Ingestion

In order to build the model and keep it updated with new products, users and interactions, data needs to be ingested to Amazon S3. Data ingestion pipelines were built using AWS Glue. This ETL coordinator and data catalog system helps organising data assets and automating the execution of ETL jobs that ingest data into the system.

Conclusion

We went through an end-to-end automated recommendation system development, from data analysis, ingestion automation to building the model and productionizing it as an API. The main key to the success of this system is the use of AWS tools like Amazon Personalize and AWS Glue. This system is being used as one of the main features in product filtering at LOi.





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