Euronext Securities Milan

DSE LAB OFFERING

ABOUT EURONEXT SECURITIES

In 2021, following the acquisition by Euronext of Borsa Italiana, the Group announced its four CSDs would now operate under the name Euronext Securities, with the ambition of pan-Europeanising and scaling its business.

EURONEXT SECURITIES

/ MILAN

The former processes for accessing, reporting and analyzing data in Euronext Securities Milan were expensive and slow. In the past years, we implemented a Data Warehouse pattern (that we call Data Lake) in an AWS cloud infrastructure using serverless services like Glue as ETL - Ingestion tool and Redshift as Relational Data Mart repository.

The initial data lake application has been deployed and is running daily in the Production environment since 2018, implementing mainly "Descriptive Analytics" - which uses data aggregation and data mining to provide insight into the past. We also implemented several Tableau dashboards to present our data in a nice and appealing form.

Euronext Securities Milan has requested to increase its data analytics possibilities by performing "Predictive Analytics", which use statistical models and AI forecasts techniques to understand the future. We fulfilled the need by adding Artificial Intelligence models to our data lake using the Amazon SageMaker product directly in our AWS accounts.

Amazon SageMaker is a fully managed service that allows data scientists to manage machine learning models using python and R libraries. SageMaker includes three modules: Build, Train, and Deploy. The Build module provides a hosted environment to work with data, experiment with algorithms, and visualize output. The Train module allows model training and tuning hyperparameters. The Deploy module provides a managed environment to host and test models for inference securely and with low latency.

Oslo

Copenhagen

Milan

Porto

■ Countries where Euronext Securities is present
■ Countries connected via investor CSD links

Euronext Securities Milan (formally known as Monte Titoli) is now part of the network of Euronext CSDs, channelling investments into local economies and supporting European capital markets.

Euronext Securities covers all stages of the value chain, from pre-settlement, settlement, custody to a complete range of asset services.

Euronext Securities has become a significant player in the European post-trade industry, with Assets Under Custody (AUC) totaling €6 trillion, and CSDs in Denmark, Italy, Norway and Portugal. Last year, we settled more that 100 million instructions in T2S, the pan-European settlement system.

Euronext Securities is the third CSD in Europe by volume and number of assets.

We have already implemented several use cases using Machine Learning, some of them are:

1 Euronext Securities Milan Participants segmentation and detection of distinctive patterns - we are benchmarking our participant to discover standardized profiles per category, sector, geographic dimension and tailored user interface for our web sites.

2 Forecasting on Post Trade time series data – we are modelling our settlement time series to cash forecast and security portfolio movements.

3 Forecasting on Settlement fails – EBC Settlement efficiency directive has introduced penalties for our customers who fails to settle their instructions on time. Predicting the probability of this event can help clients avoid penalties.

DSE Lab Offering

Our data science team daily works on this solution to provide insight and we are organizing a lab for DSE on top of this architecture. During the lab we will offer a complete training on how to work with real big data in cloud and perform advanced data science task. The lab attendees will learn by doing and they will have the chance to join our team in day-by-day activities. We are agile, we believe in people diversity, and we are happy to welcome anyone who brings their point of view to our team!

During the lab, students will learn:

- ⊘ how retrieve financial data from public or private data sources and organize them in cloud

- ⊘ how to model financial data

- ⊘ how to partition data into groups based on similarity or distance measures

- ⊘ how to create machine learning or deep learning models to forecast next day's data

- ⊘ how to build Machine Learning production pipeline in cloud

We provided a similar lab last year and two students joined our team at the end of the experience. Both have written their master thesis under our supervision and their feedback is very positive on the working experience we offered to them.

Please contact former UNIMI students Maria Giuseppina Brunelli or Andrea Ierardi to get more references.   The head of the data science laboratory is Dr. Enrico Papalini: feel free to contact him for more details.

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