

A large, stylized yellow arrow pointing to the right, with a gradient from light yellow to a darker yellow at the tip. It is positioned behind the main text.

COME AND DO YOUR TFM WITH US!!  
LIST OF PROJECTS' PROPOSALS  
IN **ACCENTURE**

# INNOVATION CENTER ENVIRONMENT

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We offer:



Flexible schedule



Work together with 85 Data Scientists



Remunerated internship



Work with around 20 other interns



# TFM PROPOSALS IN ACCENTURE

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## ABOUT FORECASTING

### ✓ **Multi-target time series forecast with Deep learning**

The goal would be to explore time series forecast using **deep learning**. It will start with building a simple LSTM modeling tool just with sales data. Then we will switch to multiple source of inputs, but still forecasting one product as output. Finally, extend to forecasting **multiple SKUs at the same time**, to consider correlations between different products. A method to assess how to cluster products before doing multiple forecasting should be included.

### ✓ **Multi-hierarchy time series forecast**

Explore a methodology to automatically explore the best way to solve a problem where products are related at **multiple levels of hierarchy** (e.g. product, country, region, product family, product division). The best approach at the end can be different depending on the case, but the method should be able to derive best solution (w.r.t to a **back-testing** accuracy output).



# TFM PROPOSALS IN ACCENTURE

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## ABOUT OPTIMIZATION

### ✓ **Rebalancing Stocks among retail points of sale**

Following a previous work to distribute stock from a distribution center; the objective is to create an end to end solution to **rebalance stock** among stores. Enable reallocation of overstock where risk of lost sales exists.

The idea is to:

- Develop classification and predictive algorithms using **Machine Learning** to identify where in a network overstocks are located and where the risk of lost sales exists
- Develop an **optimization algorithm** to calculate the best routes to execute the rebalancing of stock considering the insights from the previous bullet
- Develop a visualization layer/user interface using the R package Shiny (based on an existing visualization)

### ✓ **Branch optimization using supply chain network design methodology**

The objective of this project is to develop a solution to **allocate the branches** depending on different factors like competitors' allocation, potential clients' allocation, etc.

There is a method used in supply chain network design in which demand and distance is used to decide the best location for distribution centers. The idea is to leverage this methodology to optimize the allocation of the branches using inputs different than demand and distance and deliver:

- The algorithm that will allocate the branches depending on different inputs
- A visualization layer to present how the project was implemented. From showing the input data to show the results



# TFM PROPOSALS IN ACCENTURE



## ✓ **Post-delivery with random pick up orders**

Post-delivery companies get pickup orders during the day and they must react and send a new vehicle to make the pickup, or adapt some other vehicle route to make it.

The main objective is to **combine simulation and optimization** to come up with a set of possible solutions with certain cost and robustness. The final client would be able to select one of them.

The second objective is to compare the impact of using the optimal solution and then adapt when a new pickup order appears, vs using the solution of our method and then adapt when a new pickup order appears.

The idea is to:

- Develop a method to get a near **optimal solution** without considering potential pickup orders
- Develop a method to get a good solution considering potential pickup orders
- Develop a **visualization layer** to present the results and to compare the scenarios mentioned in the previous 2 bullets

## ABOUT BLOCKCHAIN

### ✓ **Blockchain Graph Analysis**

The use of network analysis and graph databases to **map public blockchain** and run analytics regarding user behavior and transactions patterns. From parsing node data to streaming data.

# MAIN CONTACT

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If you are interested to do your TFM with us, send an email with your CV to:



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