

# Word2Vec

for

# Basket Analysis



# **Project description**

**Background**

**Findings**

**Conclusions**

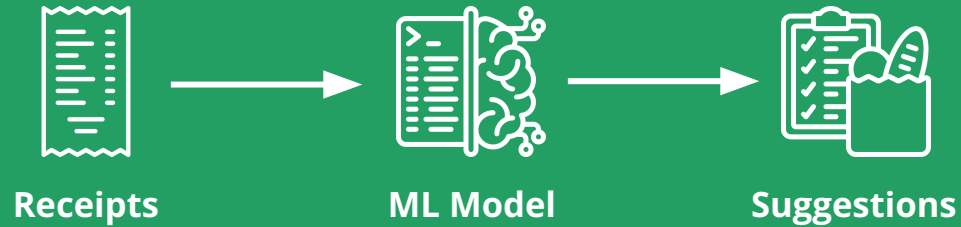
Develop a tool for assisting the store operators with **choosing the optimal promotional area composition**

**maximize**  
overall sales and  
profit margins



**complementary**  
**items** within a  
limited display area

# Proposed solution



A purely **data-driven item-based recommendation system**, that **does not suffer the experience biases** of the human operator



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# Word2Vec

Hello my **name** is Ziyang

Given the word “name”, we want to **predict its context words**, the ones that are mostly likely **to surround it in the sentence**



Given the item Macine Mulino Bianco, we want to **predict its context products**, the ones that are most likely to be **purchased in the same transaction**



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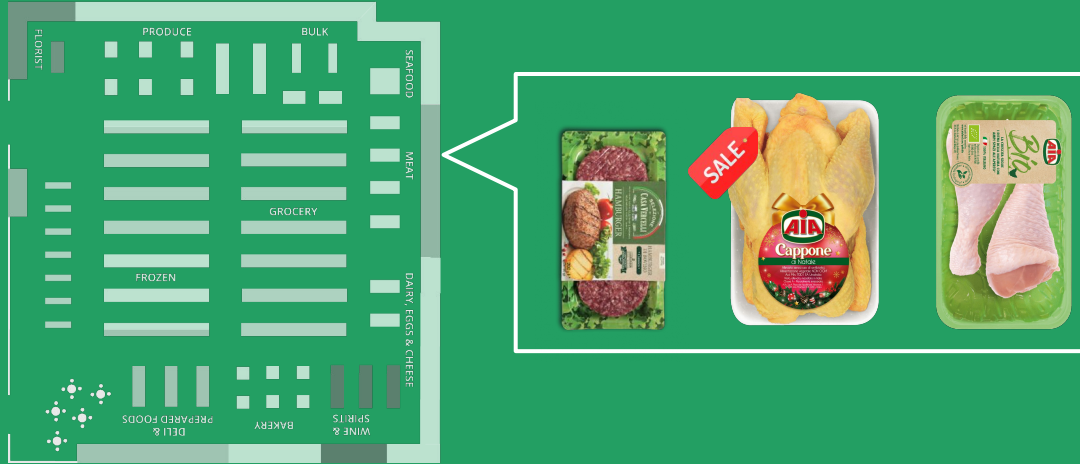
# 1. Diversity



The tool should generate a **diversified set of suggestions**, with articles that fulfil different consumption needs, in order to align with the task purpose



## 2. Aisle Bias



The tool should **avoid recommending only products usually placed nearby the promoted item** in order to enhance the cross-selling effect

### 3. Consumer Goods



The tool should **avoid recommending consumer goods**, because customers would buy them anyway, even if not displayed so prominently.

Placing them in the promotional area would mean **wasting precious space** that can be allocated to other items.

### 3. Substitutes or Complements



Depending on the use context these three products can be labeled as substitutes or as complements.

This **blurred border makes difficult to evaluate** properly the suggestions provided by the tool.



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# Task Complexity

A final judgment on the provided suggestions by a human operator is required

The actual implementation lacks completely of the business knowledge behind this task

# Tool

Cannot completely automate the product display task: its suggestions are an initial point of analysis, on which the operator integrates his knowledge

**Thank you for  
the attention**