# Analysis of the dataset $Credit\ Card\ Default$

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### Introduction

### **Data Understanding**

- 2.1 Data semantics
- 2.2 Distribution of the variables and statistics
- 2.3 Assessing data quality
- 2.4 Variables transformations
- 2.5 Correlations and redundant variables

### Clustering

<b>3.1</b> K-mear	ıs
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- 3.1.1 Choice of attributes and distance function
- 3.1.2 Choise of the best value of k
- 3.1.3 Cluster analysis

#### 3.2 DBSCAN

- 3.2.1 Choice of attributes and distance function
- 3.2.2 Study of the clustering parameters
- 3.2.3 Characterization and interpretation of the obtained clusters
- 3.3 Hierarchical clustering
- 3.3.1 Choice of attributes and distance function
- 3.3.2 Discussion of dendograms using different algorithms
- 3.4 Evaluation of clustering approaches and comparison of the clustering obtained

### **Association Rules Mining**

- 4.1 Frequent patterns extraction with different parameters
- 4.2 Discussion of the most interesting frequent patterns
- 4.3 Association rules extraction with different values of confidence
- 4.4 Discussion of the most interesting rules
- 4.5 Use the most meaningful rules to replace missing values
- 4.6 Use the most meaningful rules to predict credit card defaults

### Classification

- 5.1 Choice of attributes for the decision trees
- 5.2 Decision trees interpretation and validation with test and training set
- 5.3 Discussion of the best prediction model

### Conclusion