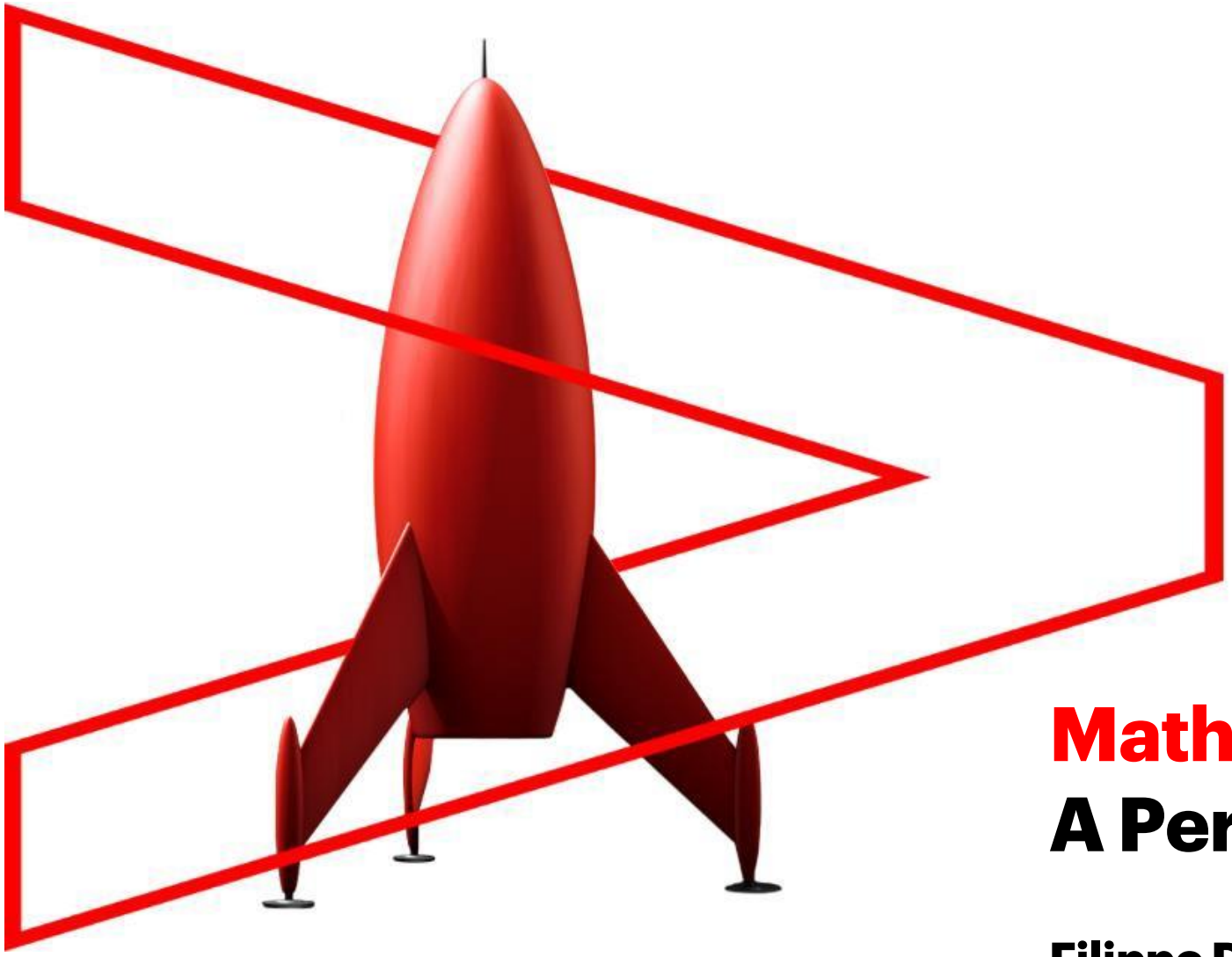


Mathematics & Consulting:
A Perfect Match

Filippo Del Rocino
University of XXX, April 2019

AGENDA

MY STORY : AN ENGINEER AT BUSINESS DISPOSAL

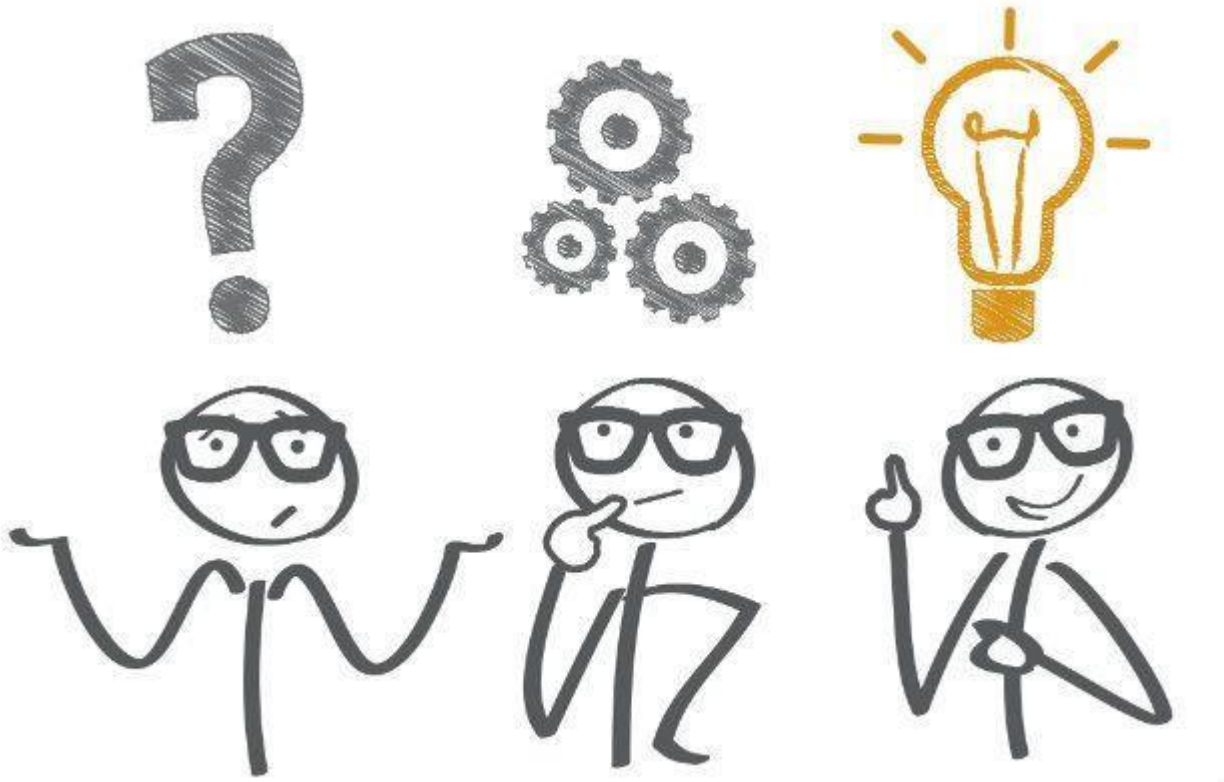
POLITECNICO MILANO 1863

TELECOMMUNICATION ENGINEERING

- Master's Degree in **Telecommunication Engineering** @ Polytechnic of Milan
- **Technical Analyst** @ Vodafone :
  Contact Centre & Office Evolution
- **Business Integration Partners** @ Bip:
  Enterprise Architect & Transformation Lead
- **Technology Strategy Manager** @Accenture
  Analytics Strategy Lead and Transformation Strategist

accenturestrategy

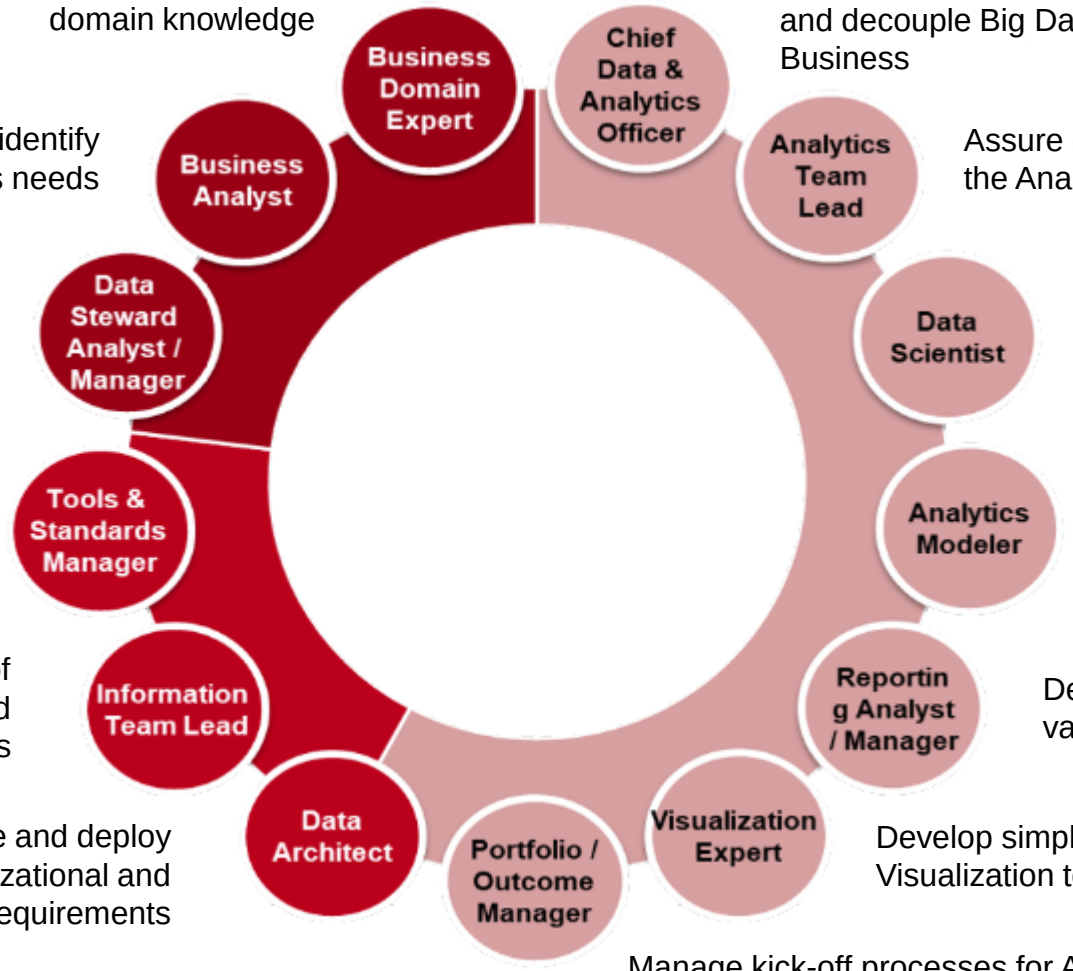
WHAT BE A CONSULTANT MEANS?



Be a consultant means SOLVING PROBLEMS!

«DATA IS THE NEW OIL»

WHY DATA ANALYTICS SKILLS ARE REQUIRED IN TODAY JOB MARKET



Act as a bridge between teams with deep domain knowledge

Define Analytics and Big Data Strategy and decouple Big Data for the entire Business

Gather Business requirements to identify BU analytics needs

Assure quality and cost alignment of the Analytics team

Assure alignment with cross-functional KPI and guarantee its adoption during project delivery

Drive Data Discovery & Data Innovation processes, identifying potential solution based on Big Data

Provide analytics tools and standards within the whole organization

Develop Analytics Model (E.g. Churn models, sentiment analysis)

Manage the creation and coherence of cross-functional metrics, standards and report activities

Develop processes to evaluate intrinsic value of new structured relation development

Design data architecture and deploy technology to satisfy organizational and customer requirements

Develop simple and intuitive Data Visualization tools

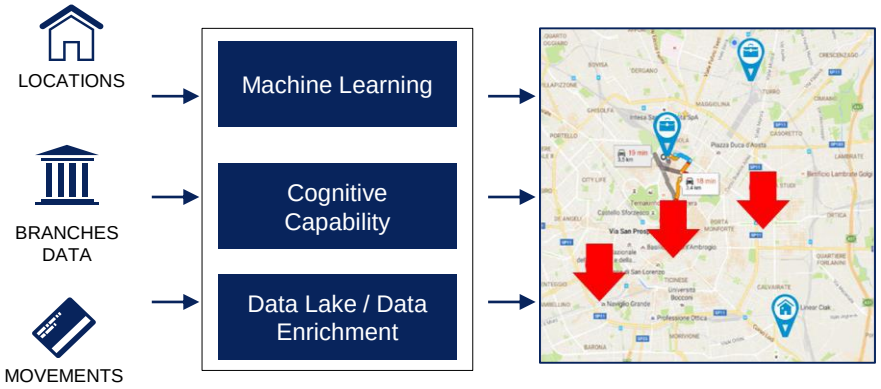
Manage kick-off processes for Analytics projects, measuring the outcome value and assigning project priorities

PROJECT EXAMPLES

1. GEO-LOCALIZATION CLUSTERING FOR A GLOBAL BANK

BUSINESS PROBLEM & CONTEXT

Identify main customer flow and preferred locations, analysing internal and external geolocation data aiming to **optimize subsidiaries network in terms of** increasing **efficiency**, boosting **Customer Care** and running Co-Marketing **initiatives**.



APPROACH

1. Identify Customer Flow

Identification of typical Customer preferred location (home, work, etc..) and main key place for credit/debit transactions

2. Apply ML Algorithms

Adopt clustering algorithms to group main preferred locations and centroid points

3. Calculate Effective Distance

Once key customer centroid points have been targeted, the distance between each bank subsidiary are calculated keeping under consideration effective mileage and traffic information (time, day of the week). As a result the closest bank is identified.

MATH METHODS ADOPTED

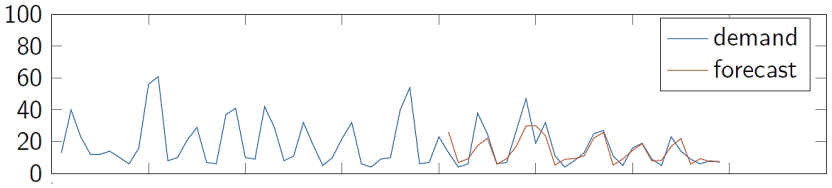
K-means algorithms

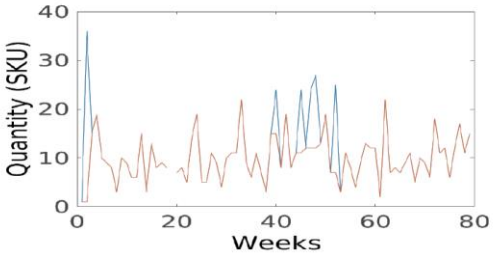
PROJECT EXAMPLES

2. DEMAND MODEL FOR RETAIL

BUSINESS PROBLEM & CONTEXT

Design a strategy to set the price of products in Retail industry, **improving profitability** and helping in this way retailers to decide in a more scientific way. The model is subdivided in two steps: first one includes the **demand estimation**, the second one the **pricing strategy**.





APPROACH

1. **Product Clustering**
Definition of an efficient way to clustering the products based on standard information such as price, sector, format

2. **New Models design**
Investigation of new regressors, testing the performances of the model

3. **Pre-processing Definition**
Creation of a new data pre-processing techniques

MATH METHODS ADOPTED

Mean and weighted price

Cluster method based on different regressors

Cumulative and standard error evaluation

PROJECT EXAMPLES

3. DEMAND ESTIMATION FOR DYNAMIC PRICING

BUSINESS PROBLEM & CONTEXT

Estimate the demand forecasting and optimization for dynamic pricing to **improve profitability** in Retail Business. The method wants to define a coherent demand model able to forecast the demand of products belonging to the same subclass.

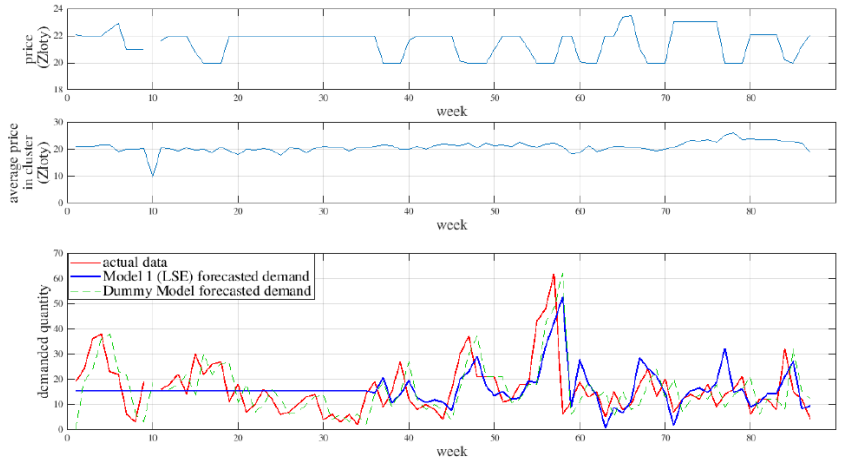
APPROACH

1. Products Clustering

Products are grouped in subclasses based on automatic classification and on “real” data.

2. Demand model identification

For each product a demand model is identified based on four regressors..



MATH METHODS ADOPTED

Substitution method

Autoregressive Dynamic model (4 regressors considered)

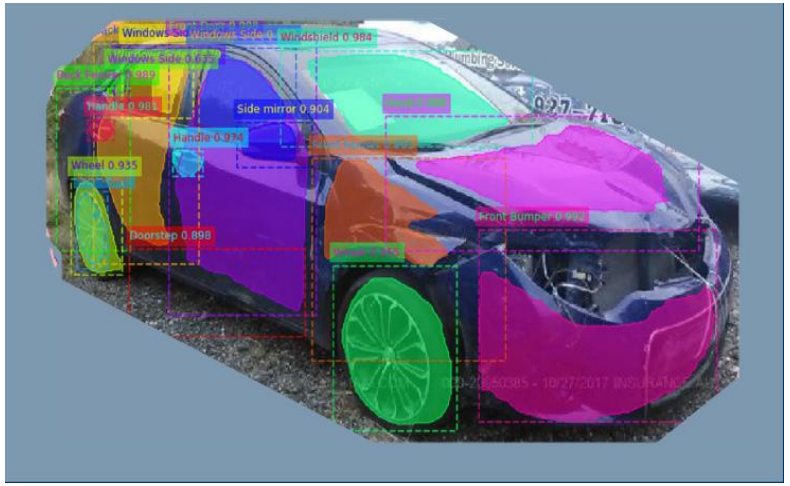
Least Square Estimator, Best Linear Unbiased Estimator, Bayes Estimator

PROJECT EXAMPLES

4. MOTOR CLAIM SOLUTION ASSESSMENT

BUSINESS PROBLEM & CONTEXT

Provide a solution that enables significant **process simplification and automation** in **car claims image recognition**. The solution, called HECTOR, is able to **automatic recognize damaged cars images** using **advanced machine learning technology** trained on a set of cars and car parts image.



APPROACH

1. Recognize the damaged parts

HECTOR uses scanning recognition capabilities to detect car parts (front & rear bumper, hood, windshield, handles, etc..).

2. Recognize the level of damage

The system assesses the pictures provided to classify the damage severity thanks to HECTOR database that contains a significant amount of photos with which has been trained to recognize the damage level

3. Total claim cost estimation

Estimation of repair cost based on expert systems and car parts catalogues considering spare parts cost (alternative / original) , workload cost, painting cost

MATH METHODS ADOPTED

Pooling Layer

Convolutional layer

K-fold cross validation

Feed Forward Computation

ACCENTURE OVERVIEW (1 DI 3)

ACCENTURE GLOBAL & ACCENTURE ITALY

Worldwide

NYSE

LISTED IN NYSE SINCE 2001

442.000

ACCENTURE COUNTS OVER 400K PROFESSIONALS WORLDWIDE AND BELIEVE IN **MAKING ITS EMPLOYEES GROWING AND LEARNING**.

120

ACCENTURE **SERVES CLIENTS** IN MORE THAN 120 COUNTRIES

In Italy

5 5 **INNOVATION CENTRES** FOR DEVELOPPING ADVANCED SOLUTION

13.000

PROFESSIONALS IN ITALY

5 **MAIN OFFICES** ARE LOCATED IN ROME, TURIN, MILAN, NAPLES, BOLOGNA TOGETHER WITH OTHER LOCAL BRANCHES

ACCENTURE OVERVIEW (2 DI 3)

ACCENTURE BUSINESSES

accenturestrategy	accentureconsulting	accenturedigital	accenturetechnology	accentureoperations
SHAPES	**TRANSFORMS**	**DIGITIZES**	**POWERS**	**OPERATES**
BUSINESS STRATEGY	FINANCIAL SERVICES	ACCENTURE INTERACTIVE	TECHNOLOGY SERVICES	BUSINESS PROCESS SERVICES
TECHNOLOGY STRATEGY	COMMUNICATIONS, MEDIA & TECHNOLOGY	ACCENTURE APPLIED INTELLIGENCE	TECHNOLOGY INNOVATION & ECOSYSTEM	JOURNEY TO CLOUD
OPERATIONS & FUNCTIONS STRATEGY	HEALTH & PUBLIC SERVICE	ACCENTURE INDUSTRY X.0	ACCENTURE DELIVERY CENTERS	
	RESOURCES			
	PRODUCTS			

ACCENTURE OVERVIEW (3 DI 3)

CARRER PATH @ ACCENTURE

Career Track: CLIENT & MARKET