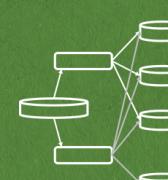


Data		Data Science			
TRADITIONAL		BIG		BUSINESS INTELLIGENCE	
WHEN it is applied	At the beginning of your analysis		After the data has been gathered & organized		After BI reports have been created and discussed
PAST	NOW	FUTURE		Predictive Analytics	
WHY you need it	data-driven decisions require well-organized and relevant raw data stored in a digital format		use data to create reports and dashboards to gain business insights		assess potential future scenarios by using advanced statistical methods
WHAT techniques are involved	DATA COLLECTION PREPROCESSING <ul style="list-style-type: none">class labeling (categorical vs numerical)data cleansingdealing with missing values CASE SPECIFIC <ul style="list-style-type: none">e.g. balancing & shuffling datasets 	DATA COLLECTION PREPROCESSING <ul style="list-style-type: none">class labeling (number, text, digital images, digital video data, digital audio data)data cleansingdealing with missing values CASE SPECIFIC <ul style="list-style-type: none">text data mining, confidentiality-preserving data mining techniques 	ANALYZE THE DATA EXTRACT INFO AND PRESENT IT IN THE FORM OF: <ul style="list-style-type: none">metricsKPIsreportsdashboards 	REGRESSION  LOGISTIC REGRESSION  CLUSTERING  FACTOR ANALYSIS  TIME SERIES 	SUPERVISED LEARNING <ul style="list-style-type: none">SVMsNNsdeep learningrandom forestsbayesian networks UNSUPERVISED LEARNING <ul style="list-style-type: none">k-meansdeep learning ML REINFORCEMENT LEARNING <p>similar to supervised learning, but instead of minimizing the loss, one maximizes reward</p>
WHERE	BASIC CUSTOMER DATA HISTORICAL STOCK PRICE DATA	SOCIAL MEDIA FINANCIAL TRADING DATA	PRICE OPTIMIZATION INVENTORY MANAGEMENT	USER EXPERIENCE (UX) SALES FORECASTING	FRAUD DETECTION CLIENT RETENTION
HOW using what tools	PROGRAMMING LANGUAGES   SOFTWARE  	PROGRAMMING LANGUAGES   SOFTWARE  	PROGRAMMING LANGUAGES   SOFTWARE  	PROGRAMMING LANGUAGES   SOFTWARE   EViews	PROGRAMMING LANGUAGES   SOFTWARE     STATA
WHO	DATA ARCHITECT DATA ENGINEER DATABASE ADMINISTRATOR	BIG DATA ARCHITECT BIG DATA ENGINEER	BI ANALYST BI CONSULTANT BI DEVELOPER	DATA SCIENTIST DATA ANALYST	DATA SCIENTIST MACHINE LEARNING ENGINEER
ARE YOU AWARE	200,000 lines of data is not necessarily big data. It is not just volume that defines a data set as 'big' - variety, variability, velocity, veracity, and other characteristics are determinative as well.		Qualitative analysis tools such as SWOT are not used for quantitative analysis. Hence, they are not part of business intelligence.		In deep learning, there is still a debate on WHY the algorithms used outperform all conventional methods.