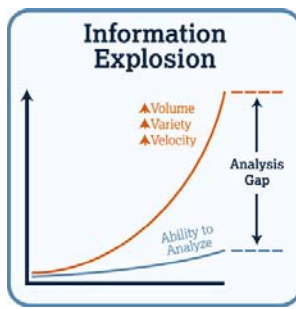


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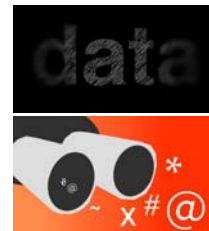
BIG DATA

Oportunidades y Desafíos

Profesor Patricio Rojas E, PhD.



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$$\begin{aligned}
 E_{XY} &= \sum_{c \in X} \left[1 - (1 - P_Y)^{|c|} \right] = \sum_{c \in X} \left[1 - \sum_{k=0}^{|c|} \binom{|c|}{k} (-P_Y)^k \right] \\
 &= \sum_{c \in X} \left[1 - \left(1 + \sum_{k=1}^{|c|} \binom{|c|}{k} (-P_Y)^k \right) \right] = \sum_{c \in X} \sum_{k=1}^{|c|} (-1)^{k+1} \binom{|c|}{k} P_Y^k \\
 &= \sum_{c \in X} \sum_{k=1}^{\infty} (-1)^{k+1} \binom{|c|}{k} P_Y^k \quad (\text{since } \binom{|c|}{k} = 0 \text{ for } k > |c|) \\
 &= \sum_{k=1}^{\infty} \sum_{c \in X} (-1)^{k+1} \binom{|c|}{k} P_Y^k \quad (\text{Fubini's theorem}) \\
 &= \sum_{k=1}^{\infty} a_k(X) P_Y^k \quad \text{where } a_k(X) = \sum_{c \in X} (-1)^{k+1} \binom{|c|}{k}
 \end{aligned}$$

of 10

2

77

145

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WHAT DO WE DO?



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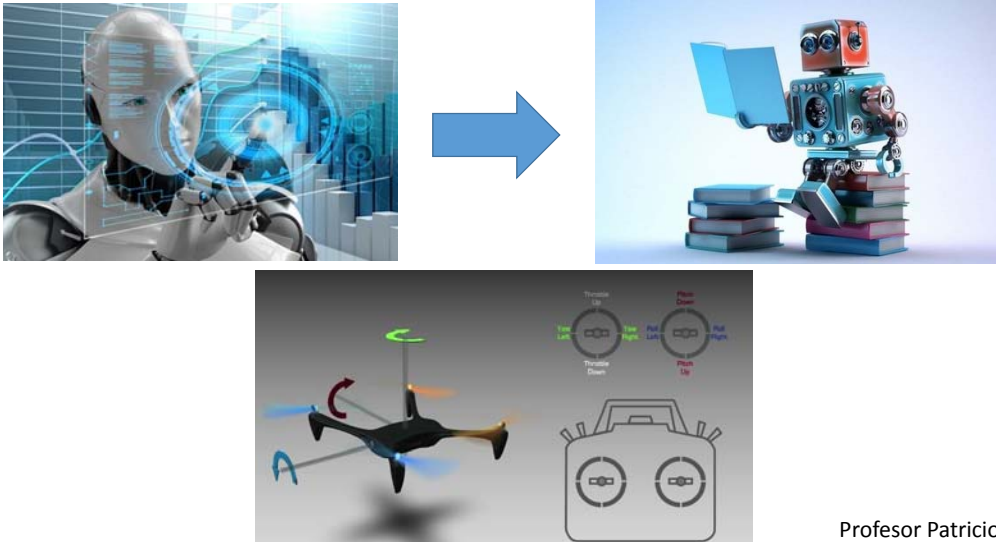
BERRIES

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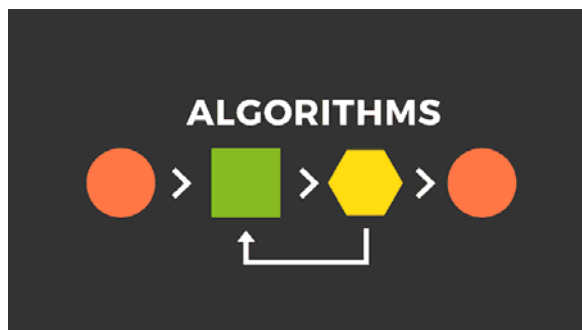
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Machine Learning - ¿de dónde?



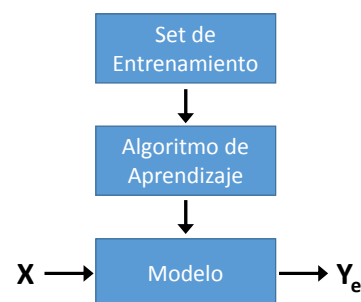
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Machine Learning - ¿Cómo funciona?



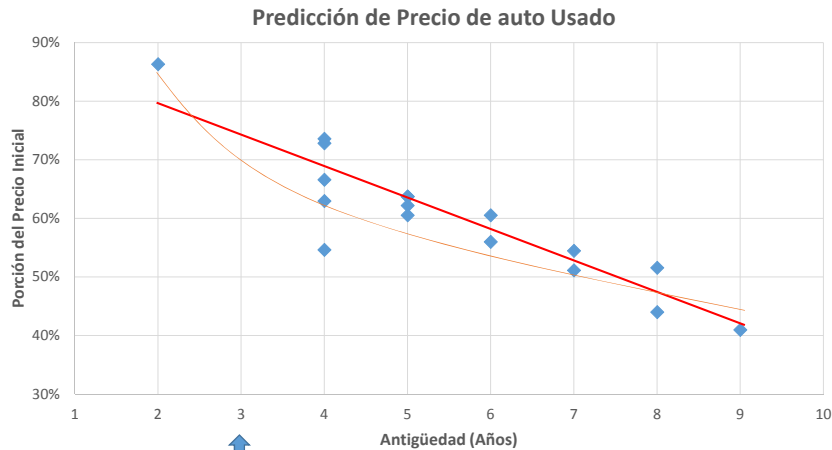
Aprendiendo de la Experiencia

Un algoritmo aprende de la experiencia (E) respecto a una tarea (T), si el desempeño (D) mejora con la experiencia (E).





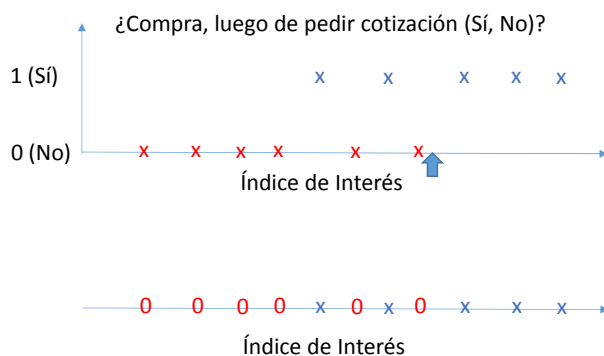
Machine Learning – Aprendizaje Supervisado



Tipo de output: continuo
Tipo de problema: regresión



Machine Learning – Aprendizaje Supervisado



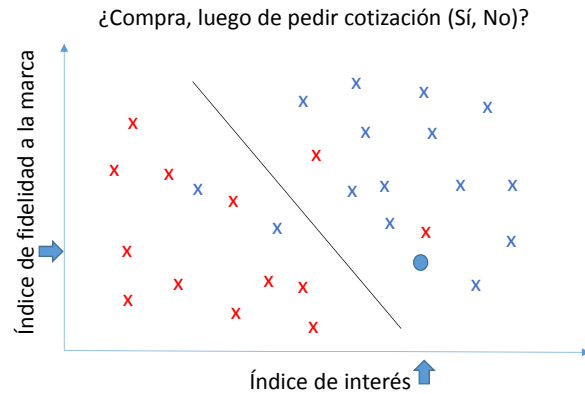
Tipo de output: discreto
Tipo de problema: clasificación



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Machine Learning – Aprendizaje Supervisado



- Barrio de residencia
- Tipo de auto actual
- Cantidad de autos en familia
- Uso esperado del auto

Posibles resultados

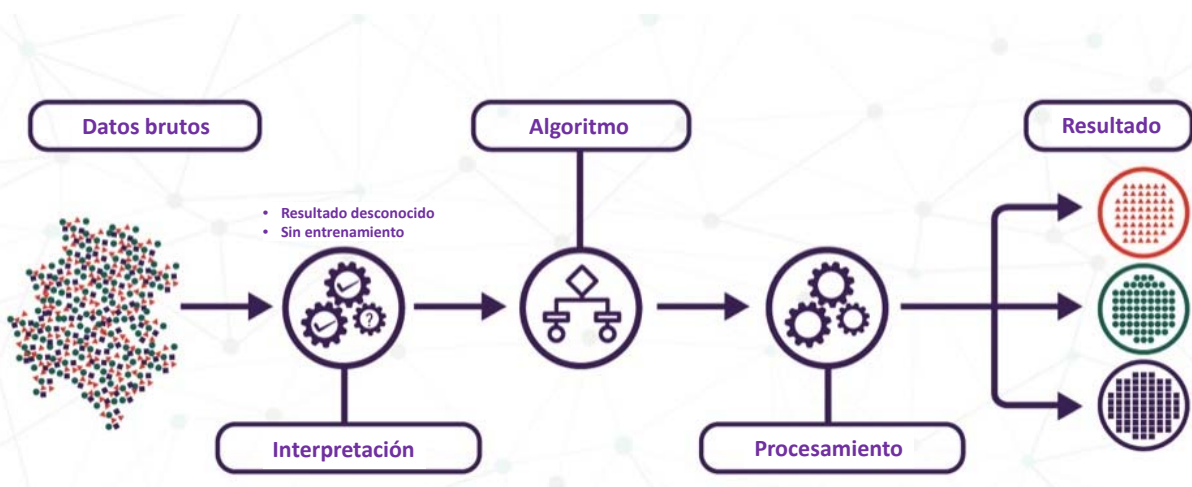
- 0 : No compra
- 1 : Compra dentro del mes
- 2 : compra después
- 3: compra a otro concesionario

Tipo de output: discreto
Tipo de problema: clasificación

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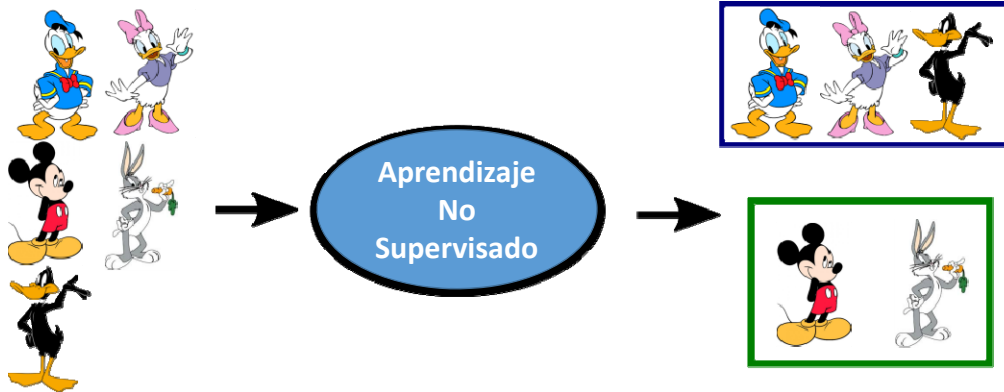
Machine Learning – Aprendizaje No Supervisado



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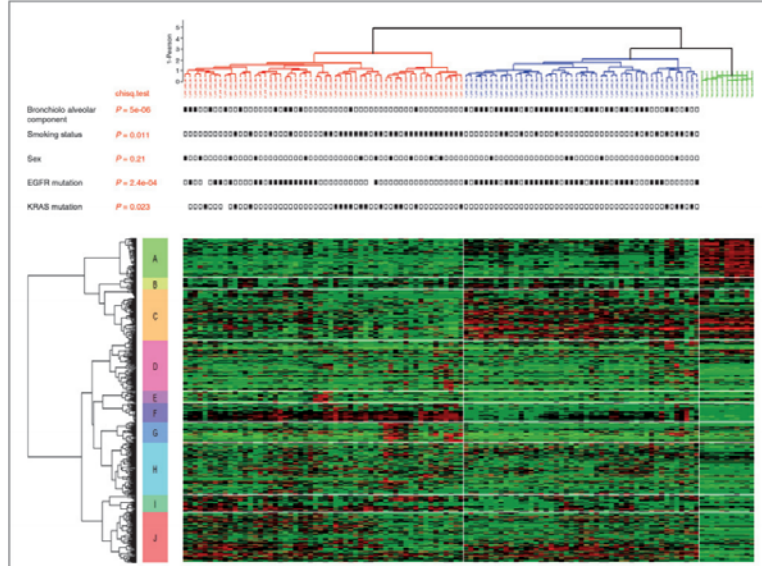
Today	Wed	Thu	Fri	Sat
86°F 60°F	90°F 62°F	86°F 59°F	84°F 56°F	77°F 51°F

C | F | K [More on weather.com](#)

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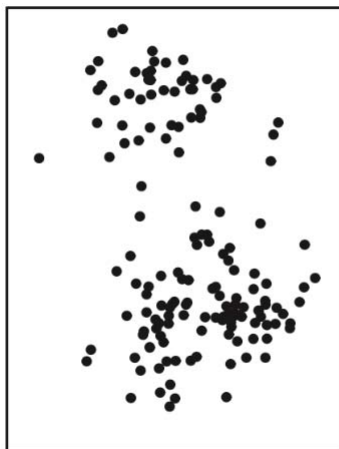
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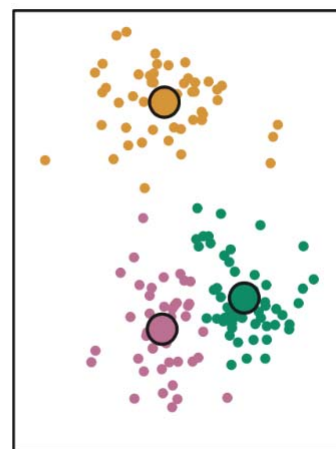
Machine Learning – Aprendizaje No Supervisado

Datos brutos



Clustering K-means

Resultado final



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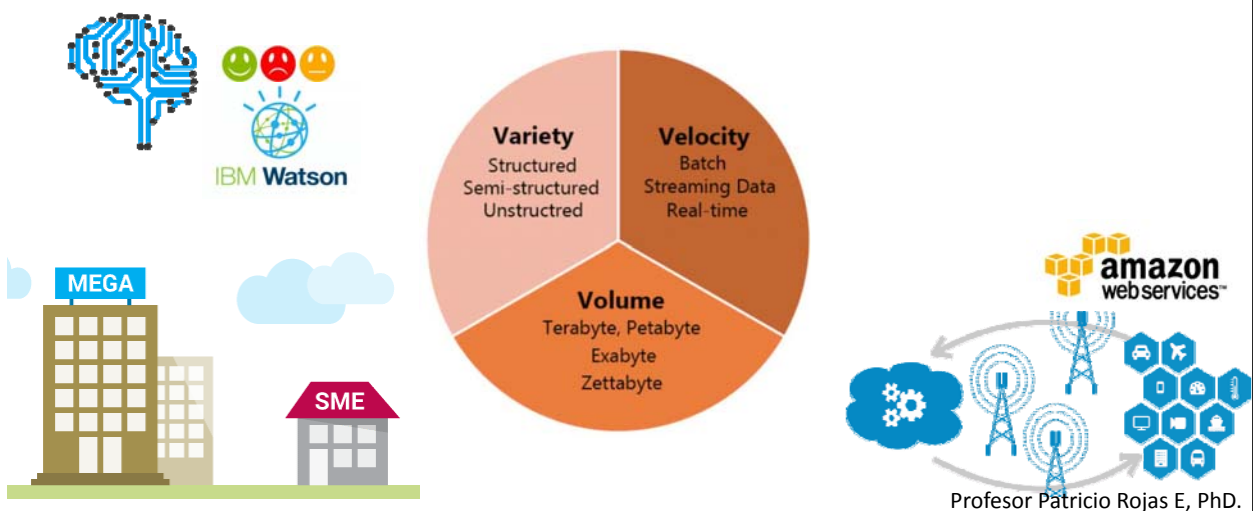


Los desafíos



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Desafíos Técnicos



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Desafíos Capital Humano



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Management

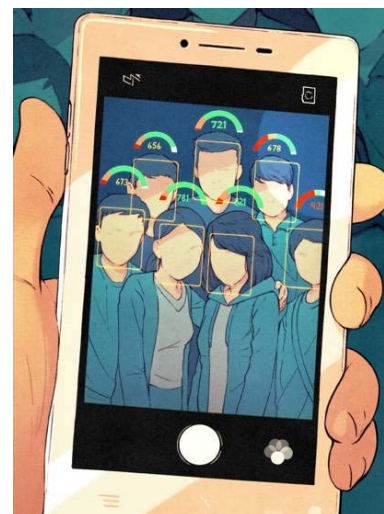


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Seguridad y Terrorismo

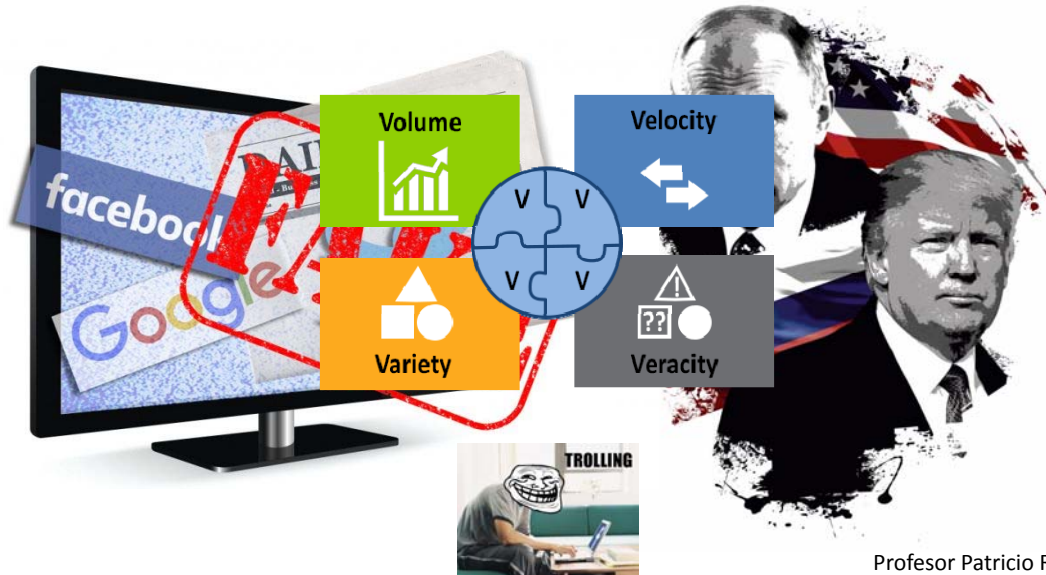


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TELEMATICS WIRE AUTONOMOUS VEHICLES CONNECTED VEHICLES ADAS

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September 28, 2017



Next Gen > MACHINE LEARNING
Toyota, Intel Leading New Big Data Automotive Consortium

The group, which also includes Denso, Ericsson and Nippon Telegraph and Telephone, aims to get ready for huge connected car data streams.

Todd B. Weiss / Aug 29, 2017

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Experimentando con Machine Learning





Experimentando con Machine Learning



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Experimentando con Machine Learning

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Const	290.977	0%	**
R-sq (adj.)	50%		

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Enero 2015 a Septiembre 2018

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