

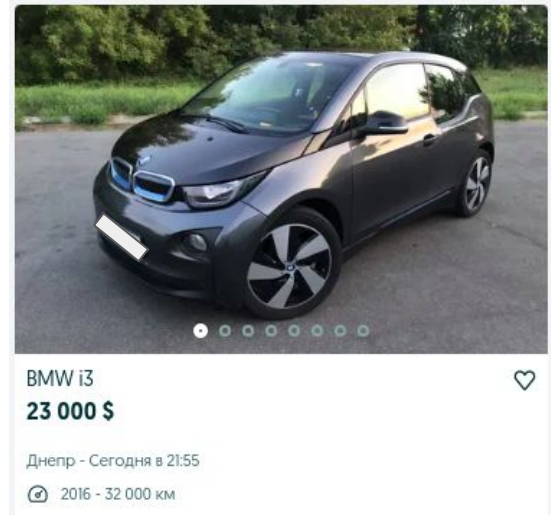
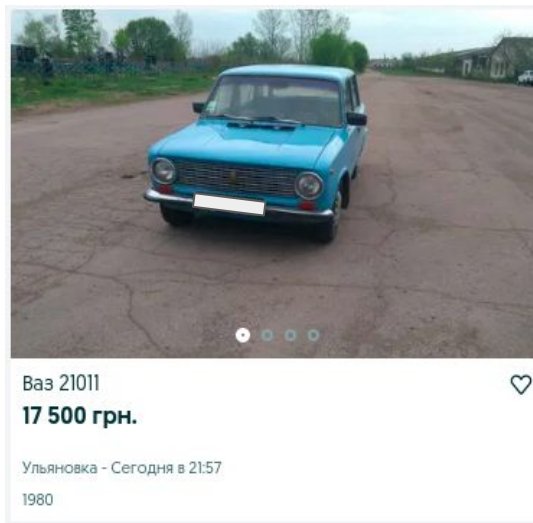
Machine Learning Zoomcamp

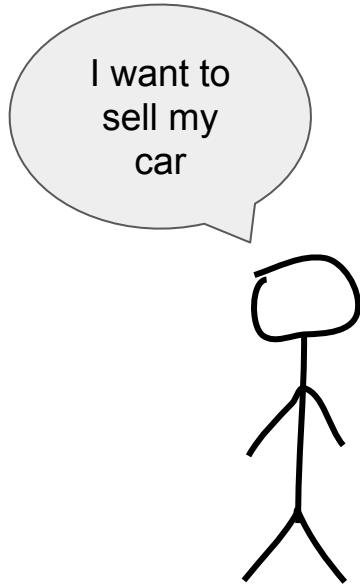
Session #1.1

Introduction to Machine Learning

DataTalks.Club

Imagine we have a car classifieds website







Describe in detail

Enter a name *

toyota hilux|



Add words to make your ad easier to find in the title.



Toyota

Transport / Cars



Photo

The first photo will be on the cover of the announcement. Drag to reorder.



Description*

Toyota Hilux, almost new



Price

Exchange

Price *

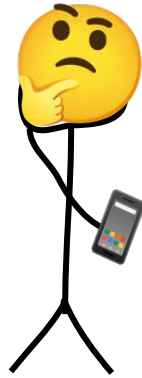
UAH



Required field



Price	Exchange
Price *	
<input type="text"/>	UAH 
Required field	



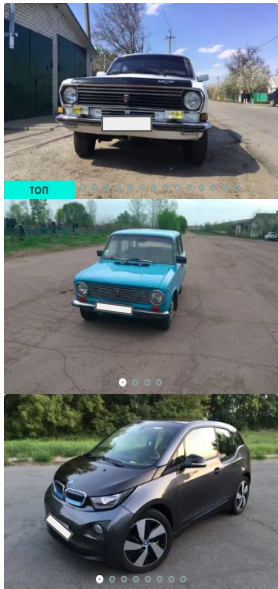
Price	Exchange
Price *	
<input type="text"/>	UAH 
Required field	

How can we help our user select the best price?



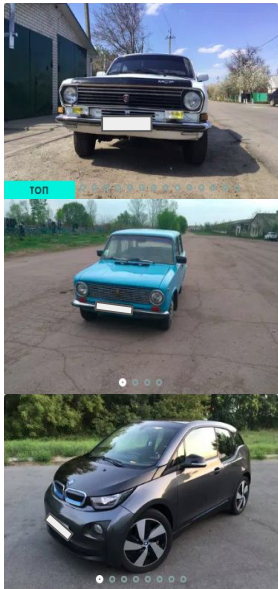
Price	Exchange
Price *	
<input type="text"/>	UAH 
Required field	

What do we know about cars?



Price
\$1.1k
\$0.6k
\$23k

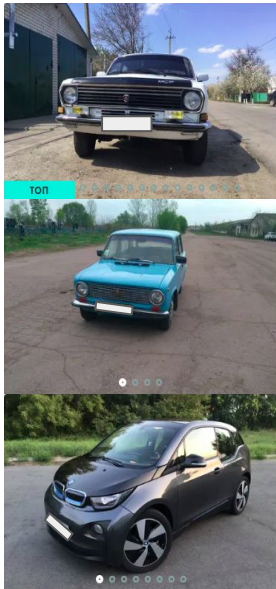
What do we know about cars?



Year			
1995			
1980			
2016			

Price
\$1.1k
\$0.6k
\$23k

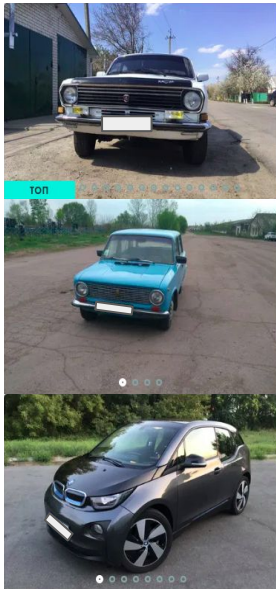
What do we know about cars?



Year	Make		
1995	GAZ		
1980	VAZ		
2016	BWM		

Price
\$1.1k
\$0.6k
\$23k

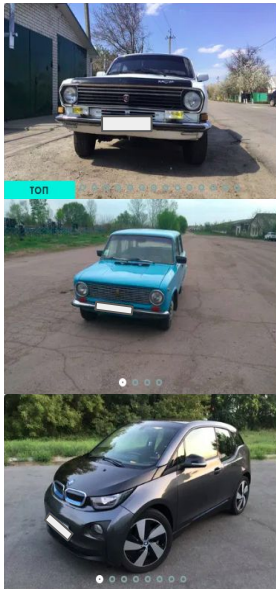
What do we know about cars?



Year	Make	Mileage	
1995	GAZ	200.000	
1980	VAZ	100.000	
2016	BWM	5.000	

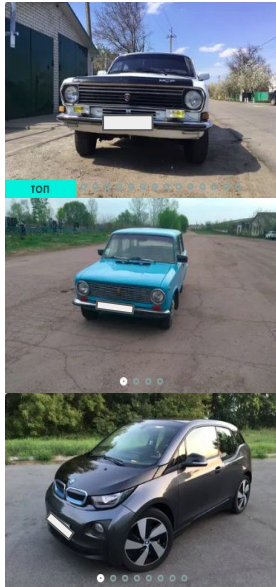
Price
\$1.1k
\$0.6k
\$23k

What do we know about cars?

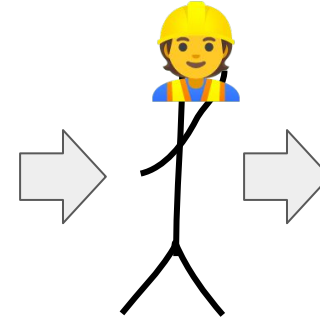


Year	Make	Mileage	...
1995	GAZ	200.000	...
1980	VAZ	100.000	...
2016	BWM	5.000	...

Price
\$1.1k
\$0.6k
\$23k

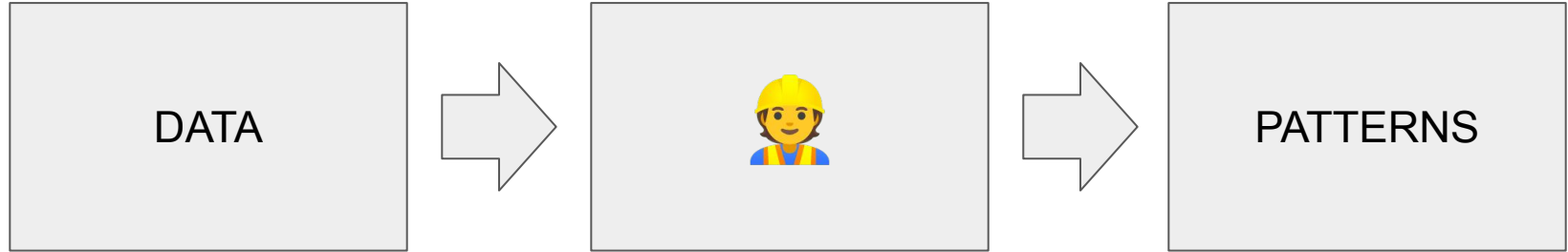


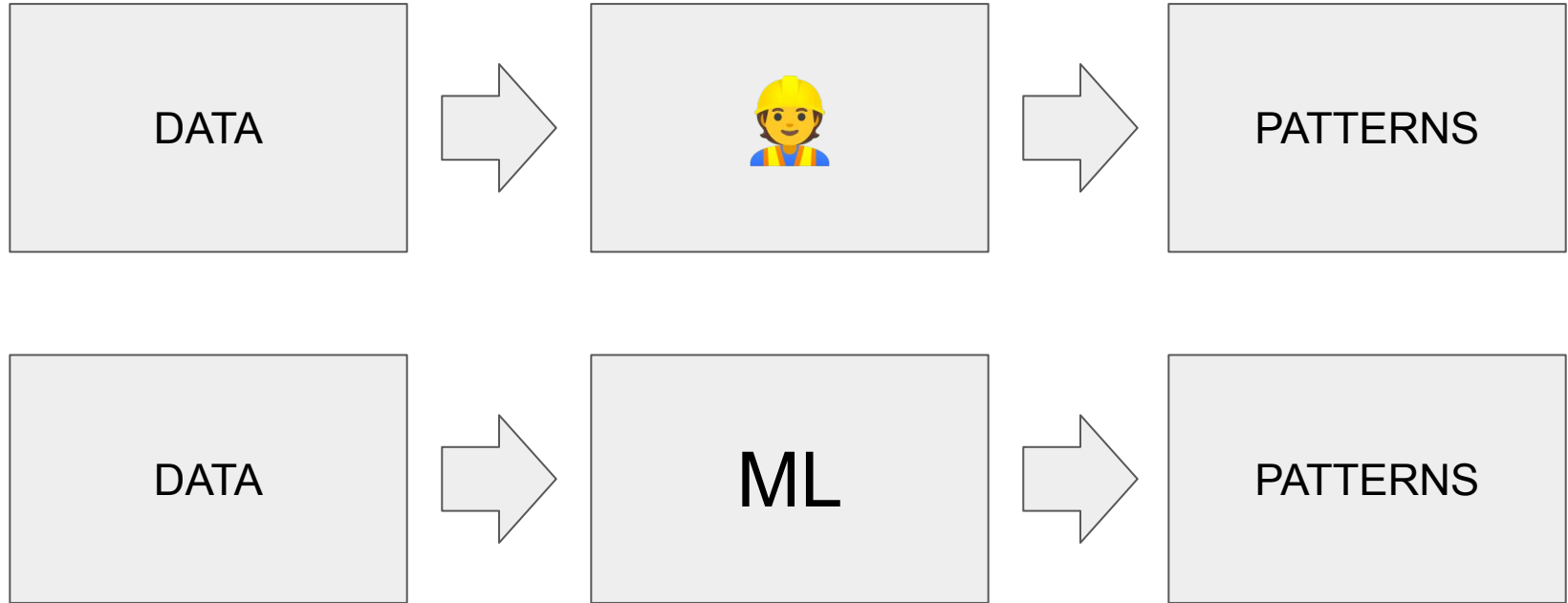
Year	Make	Mileage	...
1995	GAZ	200.000	...
1980	VAZ	100.000	...
2016	BWM	5.000	...



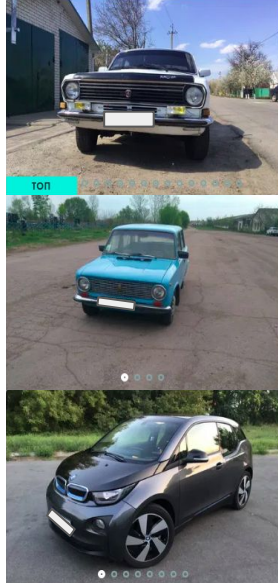
Price
\$1.1k
\$0.6k
\$23k

Using this information, an expert can determine the price









If an expert can, so can a model!

	Year	Make	Mileage	...	Price
	1995	GAZ	200.000	...	\$1.1k
	1980	VAZ	100.000	...	\$0.6k
	2016	BWM	5.000	...	\$23k

“Features”
what we know about cars

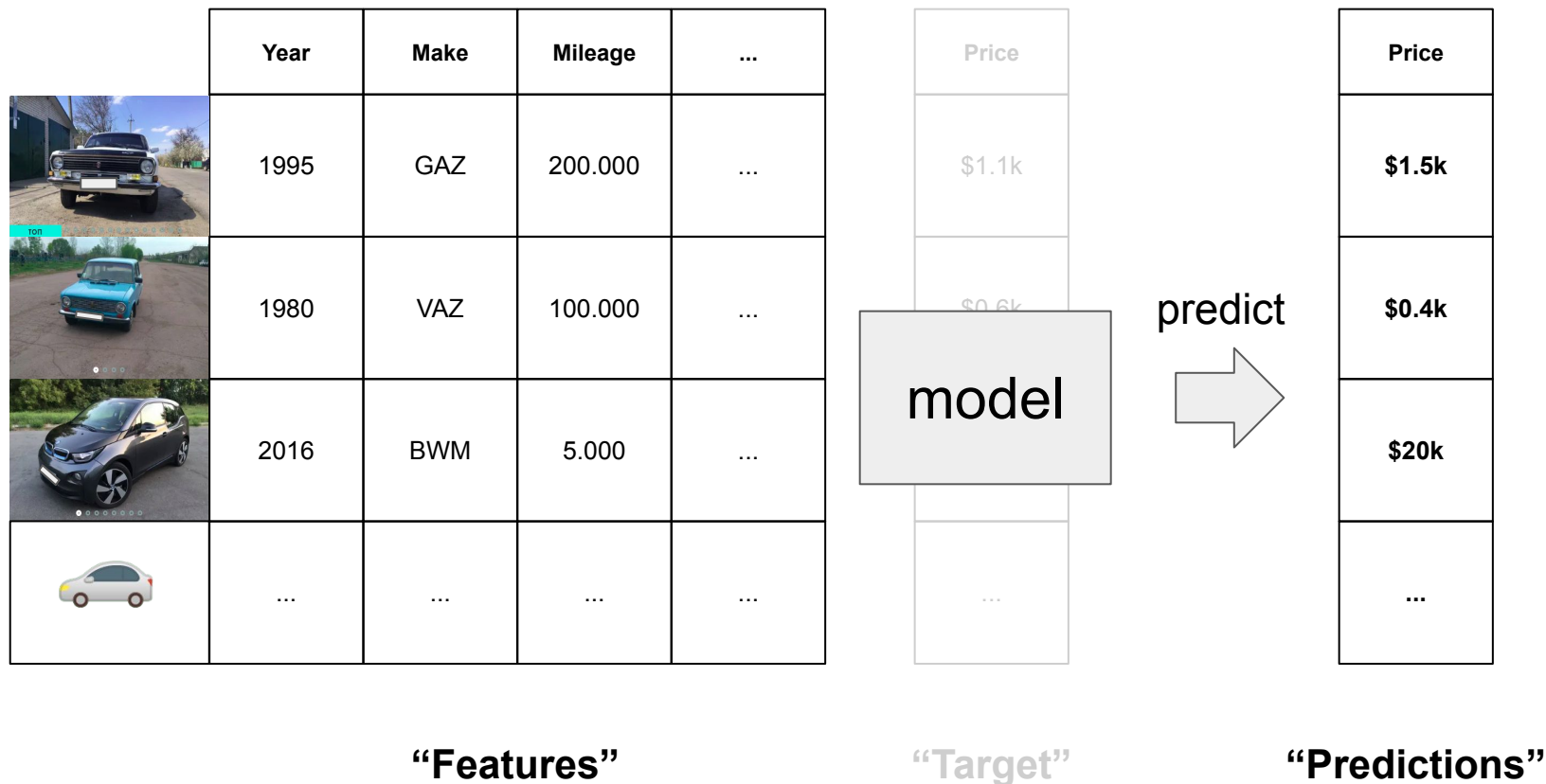
“Target”
what we want to predict

	Year	Make	Mileage	...	Price
	1995	GAZ	200.000	...	\$1.1k
	1980	VAZ	100.000	...	\$0.6k
	2016	BWM	5.000	...	\$23k


Machine Learning



Using a model



Describe in detail

Enter a name *

toyota hilux



Add words to make your ad easier to find in the title.



Toyota
Transport / Cars



Photo

The first photo will be on the cover of the announcement. Drag to reorder.



Description*

Toyota Hilux, almost new



Price

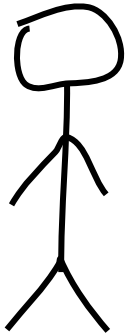
Exchange

Price *

UAH



Required field





Describe in detail

Enter a name *

toyota hilux



Add words to make your ad easier to find in the title.

Year

1995



Photo



Make

GAZ

Description*

Toyota Hilux, almost new



Mileage

200.000

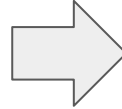
Price *

...

...\$H



Required field



model



Describe in detail

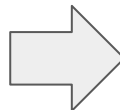
Enter a name *

toyota hilux ✓

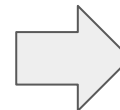
Add words to make your ad easier to find in the title.

Year	1995 >
Make	GAZ
Mileage	200.000
Price *	...

Required field



model



Price

Price *

50000

Create an ad

Describe in detail

Enter a name *

toyota hilux



Toyota

Transport / Cars



Photo

The first photo will be on the cover of the announcement. Drag to reorder.



Description*

Toyota Hilux, almost new



Price

Exchange

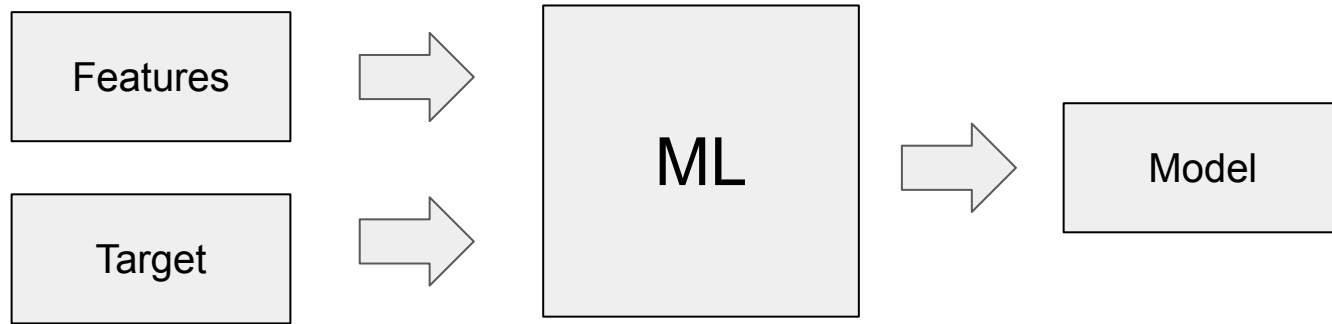
Price *

50000

\$



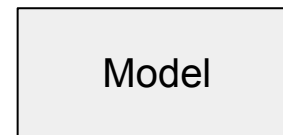
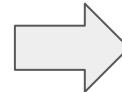
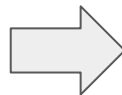
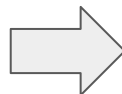
Model training



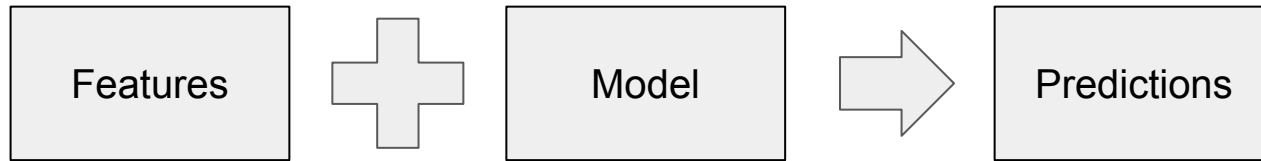
Model training

Year	Make	Mileage	...
1995	GAZ	200.000	...
1980	VAZ	100.000	...
2016	BWM	5.000	...
...

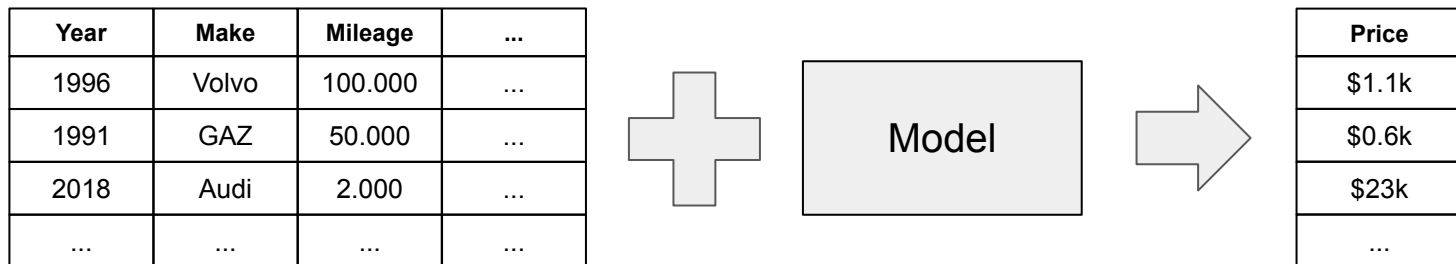
Price
\$1.1k
\$0.6k
\$23k
...



Predictions



Predictions



Next

Machine Learning vs Rule-Based System

- Spam detection example