

# Window features

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Window features

# Lag feature

- A past value of the target or feature is used to create a lag feature.

	target ↓	feature ↓
Date	Sales	Ad spend
2020-02-12	23	100
2020-02-13	30	120
2020-02-14	35	90
2020-02-15	30	80
2020-02-16	?	?

# Lag feature

- A past value of the target or feature is used to create a lag feature.
- Can we summarise more than one past value into a single feature?

Date	Sales	Sales Lag 1	Ad spend
2020-02-12	23	NaN	100
2020-02-13	30	23	120
2020-02-14	35	30	90
2020-02-15	30	35	80
2020-02-16	?	30	?

# Window feature

- A past value of the target or feature is used to create a lag feature
- Can we summarise more than one past value into a single feature?
- A window feature is where we compute statistics (e.g., mean, min, max) using a window over the past data.

Date	Sales	Sales Window	Ad spend
2020-02-12	23		100
2020-02-13	30		120
2020-02-14	35		90
2020-02-15	30		80
2020-02-16	?		?

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Date	Sales	Sales mean	Ad spend
2020-02-12	23		100
2020-02-13	30		120
2020-02-14	35		90
2020-02-15	30		80
2020-02-16	?	31.7	?

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- Can we summarise more than one past value into a single feature?
- A window feature is where we compute statistics (e.g., mean, min, max) using a window over the past data.
- We can create window features from both the target or other features.

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2020-02-12	23		100
2020-02-13	30		120
2020-02-14	35		90
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2020-02-16	?	31.7	?

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- A window feature is where we compute statistics (e.g., mean, min, max) using a window over the past data.
- We can create window features from both the target or other features.

Date	Sales	features	
		Ad spend mean	Ad spend
2020-02-12	23		100
2020-02-13	30		120
2020-02-14	35		90
2020-02-15	30		80
2020-02-16	?	96.7	?

# In this section we will discuss...

How to choose a window size & statistics.

Window types: rolling vs expanding windows.

Adding weights to the windows.

How to implement these methods in Python.