



Machine Learning in the Frontend of Booking.com

4e Montreux International Tourismus Forum

08/11/2023

Dennis Bohle - Fellow Scientist in Machine Learning

Booking.com

232M+

verified guest reviews

in **46**

languages and dialects

Since 2010, Booking.com has welcomed

4.5B+

guest arrivals

28M

total reported listings worldwide

6.6M

options in homes, apartments and other unique places to stay

155,000

destinations around the world

Car hire available in **140+** countries and pre-booked taxis in over **500** cities across **120+** countries

30

different types of places to stay, including homes, apartments, B&Bs, hostels, farm stays, bungalows, even boats, igloos and treehouses

14,000+ Employees, ~400 working in AI

B.

Machine Learning @ Booking.com



Amsterdam

3 reasons to visit: **Van Gogh Museum, Coffee Shops, Red Light District**

Amsterdam's intriguing history spans seven centuries. From humble beginnings as a small village to a world power in the seventeenth century, Amsterdam today is a beguiling mix of history and commerce.... [Show more](#)



Search

Destination/property name:

Check-in date

 Monday 17 June 2019

Check-out date

 Thursday 20 June 2019

3-night stay

 adults

I'm travelling for work ?

Filter by:

Your budget

- € 50 - € 100 per night 31
- € 100 - € 150 per night 106
- € 150 - € 200 per night 159
- € 200 + per night 242

Popular filters

- Amsterdam City Centre 190
- Breakfast included 162



Amsterdam is a top pick amongst travellers on your selected dates (74% reserved).

Tip: Prices may be higher than usual for the dates you have selected, why not try again with these alternatives?

15 Jun - 18 Jun

From € 314 per night
85% reserved

16 Jun - 19 Jun

€ 23 less per night
75% reserved

17 Jun - 20 Jun

From € 209 per night
74% reserved

18 Jun - 21 Jun

From € 219 per night
78% reserved

19 Jun - 22 Jun

From € 316 per night
81% reserved

Amsterdam: 384 properties found

Our top picks

Price (lowest first)

Review score and price

Stars

Star rating and price

...

Bestseller



Hotel Casa Amsterdam ★★★

Qost, Amsterdam – [Show on map](#) (3.1 km from centre) – [Metro access](#)

1 other person looked for your dates in the last 10 minutes

Booked 4 times for your dates in the last 6 hours

Twin Room – 2

Only 2 rooms left on our site!

Very good 8.4
6,979 reviews

3 nights, 2 adults

€-547 **€ 479**

+€ 31 taxes and charges

[See our last available rooms >](#)



Hotel Tamara ★

Amsterdam City Centre, Amsterdam – [Show on map](#) (300 m from centre) – [Metro access](#)

Family Room with Shared Bathroom – 1 × 5

Only 1 room left on our site!

Review score 5.4
1,119 reviews

3 nights, 2 adults

€ 600

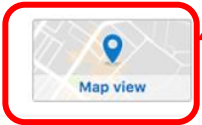
+€ 39 taxes and charges

[Choose your room >](#)

Einstellungen der Website

Produkte

Amsterdam
3 reasons to visit: Van Gogh Museum, Coffee Shops, Red Light District
Amsterdam's intriguing history spans seven centuries. From humble beginnings as a small village to a world power in the seventeenth century, Amsterdam today is a beguiling mix of history and commerce.... [Show more](#)



Personalisierte Elemente

NLP/Topic modeling

Search
Destination/property name:
Amsterdam
Check-in date:
17 Monday 17 June 2019
Check-out date:
20 Monday 20 June 2019
3-night stay
2 adults
No children 1 room
I'm travelling for work
Search

Metriken

Amsterdam is a top pick amongst travellers on your selected dates (74% reserved).
Tip: Prices may be higher than usual for the dates you have selected, why not try again with these alternatives?

74% reserved	15 Jun - 18 Jun From € 314 per night 85% reserved	16 Jun - 19 Jun From € 200 per night 5% reserved	17 Jun - 20 Jun From € 209 per night 74% reserved	18 Jun - 21 Jun From € 219 per night 78% reserved	19 Jun - 22 Jun From € 316 per night 81% reserved
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Empfehlungen

Automatische Erkennung von beliebten Hotels

Amsterdam: 384 properties found

Our top picks

Price (lowest first) Review score and price Stars Star rating and price

Bestseller

Hotel Casa Amsterdam ★★ ★ 19
Very good 8.4
6,979 reviews
Qoast, Amsterdam - Show on map (3.1 km from centre) - Metro access
1 other person looked for your dates in the last 10 minutes
Booked 4 times for your dates in the last 6 hours
Twin Room - 2 people
Only 2 rooms left on our site!
3 nights, 2 adults
€-547 € 479
+€ 31 taxes and charges
See our last available rooms

Ranking

Bilderkennung/Auswahl

Filter by:

Your budget

- € 50 - € 100 per night 31
- € 100 - € 150 per night 106
- € 150 - € 200 per night 159
- € 200 + per night 242

Popular filters

- Amsterdam City Centre 190
- Breakfast included 182

Hotel Tamara ★
Review score 5.4
1,119 reviews
Amsterdam City Centre, Amsterdam - Show on map (300 m from centre) - Metro access
Family Room with Shared Bathroom - 5 people x 5
Only 1 room left on our site!
3 nights, 2 adults
€ 600
+€ 39 taxes and charges
Choose your room



10,000,000,000 predictions per day

300+ live ML models

AI is being applied in more and more processes and products - Impacting **all** departments at Booking.com

How AI helps to deliver a better customer experience



Product

- Default Ranking
- Similar Accommodations
- Click History
- Product Types



Destinations

- Plain Recommendations
- Autocomplete
- Similar Destinations
- Multi-city Trip Destinations
- Nearby Destinations



Dates

- Alternative Dates
- No Dates
- Available Dates



More

- Filters
- Discounts
- Room Types
- Reasoning

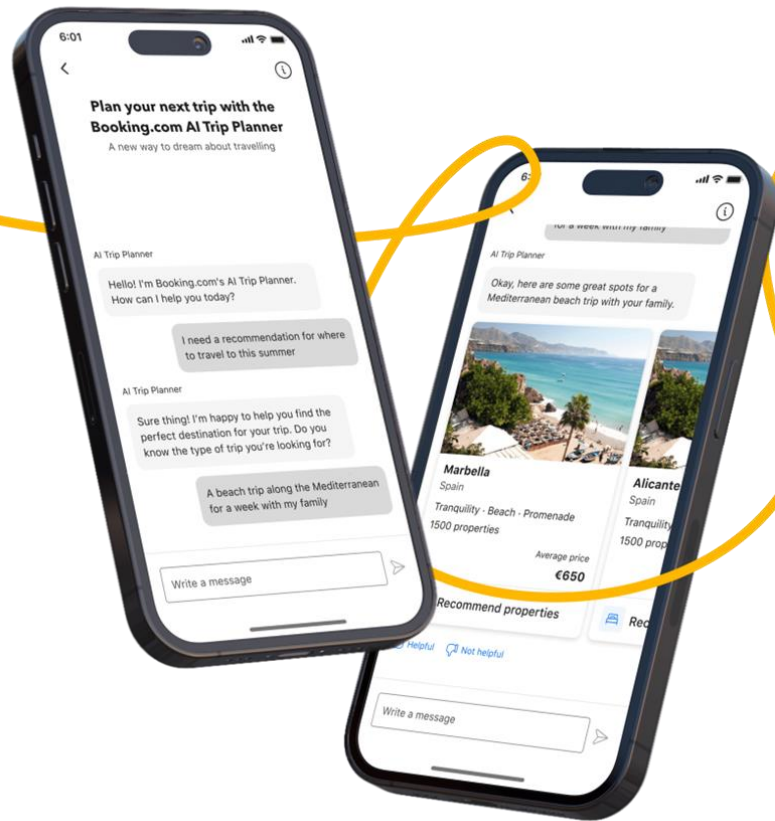


Where to go next?



The next city to visit

AI Trip Planner



Introducing a new AI trip planner

Making it easier to travel the world with our new AI trip planner

- A new way to search, explore and book
- Built on Booking.com's machine learning expertise
- More tailored and relevant travel recommendations providing travelers with customised trip itineraries
- Integrated travel planning experience
- Launched to a selection of US Genius travellers with plans to scale globally.





Merci :)

Dennis Bohle - Fellow Scientist in Machine Learning

Booking.com