



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Big Data & Hospitality

Offerta & Esperienza Cliente

*Possibilità di analisi nel settore ospitalità
l'esempio del Comune di Verona*

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Approccio raccolta (*customizzabile*)

- ❑ **Scraping and data retrieving**
 - ❑ *Fonti*: Booking + AirBnb
 - ❑ *Contenuti*: descrizione, localizzazione, prezzi, servizi, review (con parziale id del reviewer)
 - ❑ *Dimensioni*: tipologia canale; tipologia offerta (H, BnB, altre AT ...), qualità offerta (*, voto Booking); geografica (micro-geo tag); temporale (forward ripetuto e su giorni specifici); lingua e nazione provenienza reviewer





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Micro Geo-Tag

Disponibilità

- numero di **strutture per area** (definizione customizzabile) [es. 12/15 Marzo 2020, @ 11 Gennaio 2020; Booking+AirBnB]

```
Centro Storico    233
area              56
Borgo Roma       38
Borgo Milano     25
Borgo Trento     24
Porta Nuova      17
Fiera            13
San Zeno         10
Borgo Venezia    7
San Michele      2
Name: area, dtype: int64
```



Prezzi

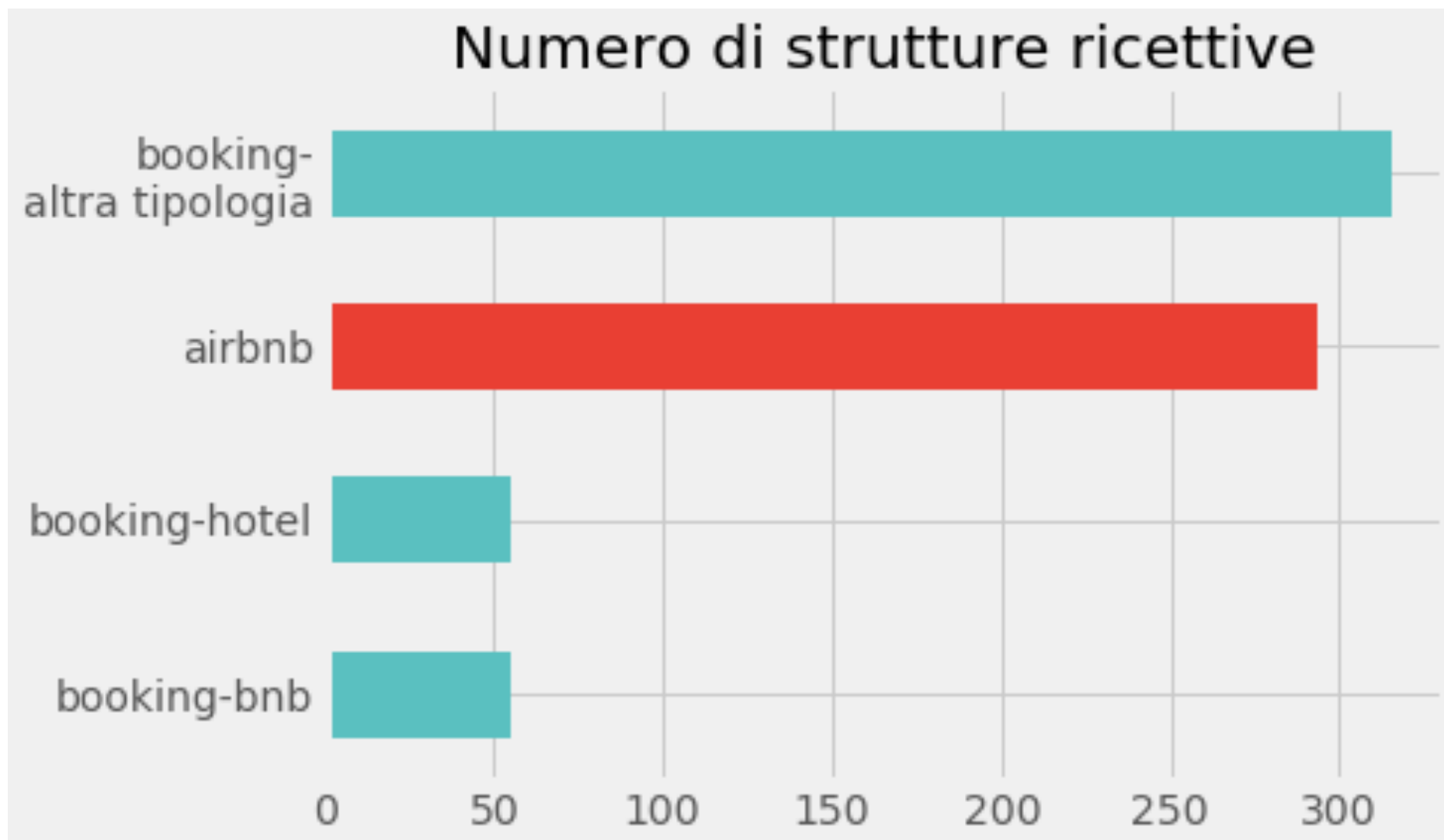




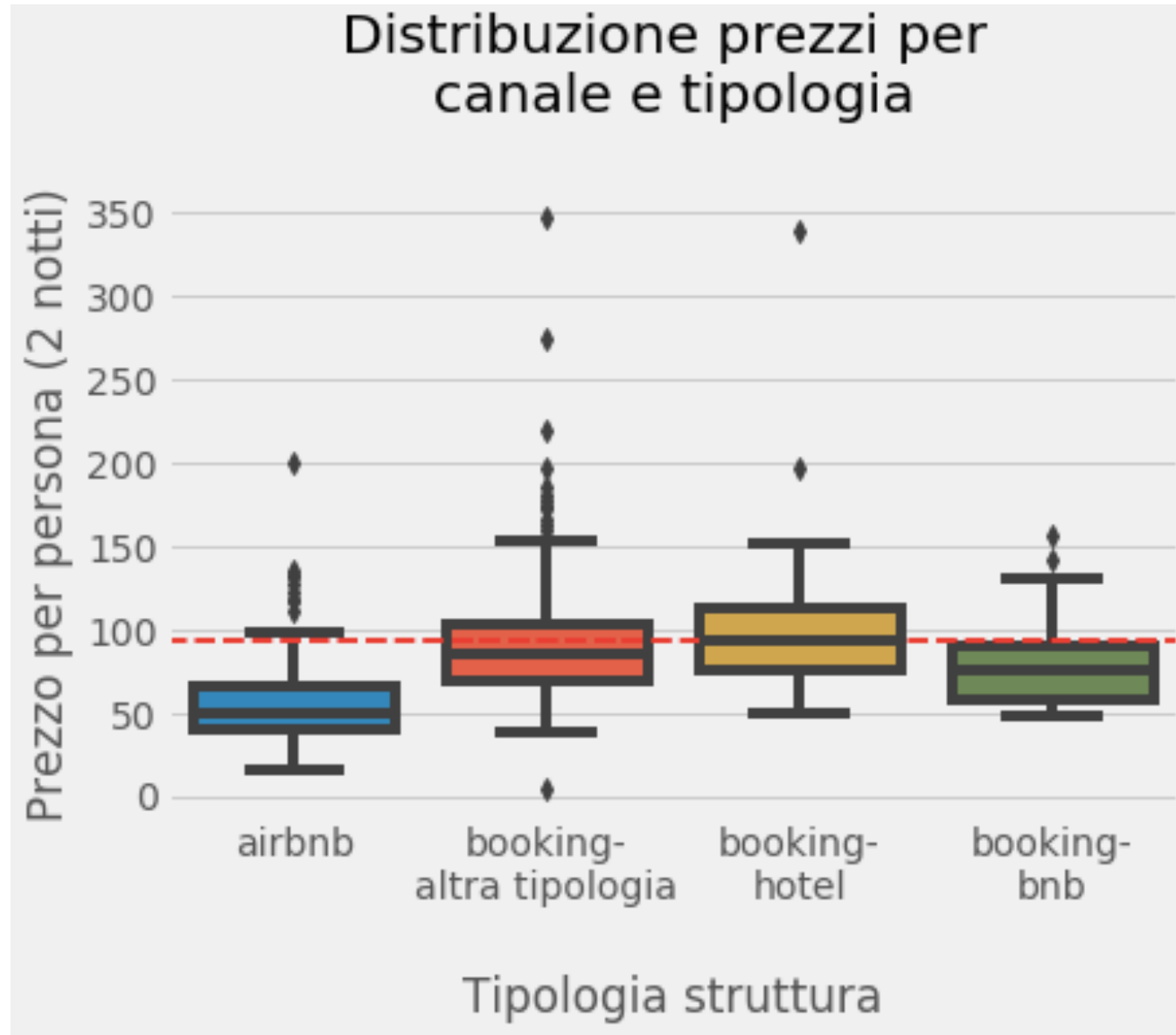
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Canale & Tipologia

Disponibilità



Prezzi





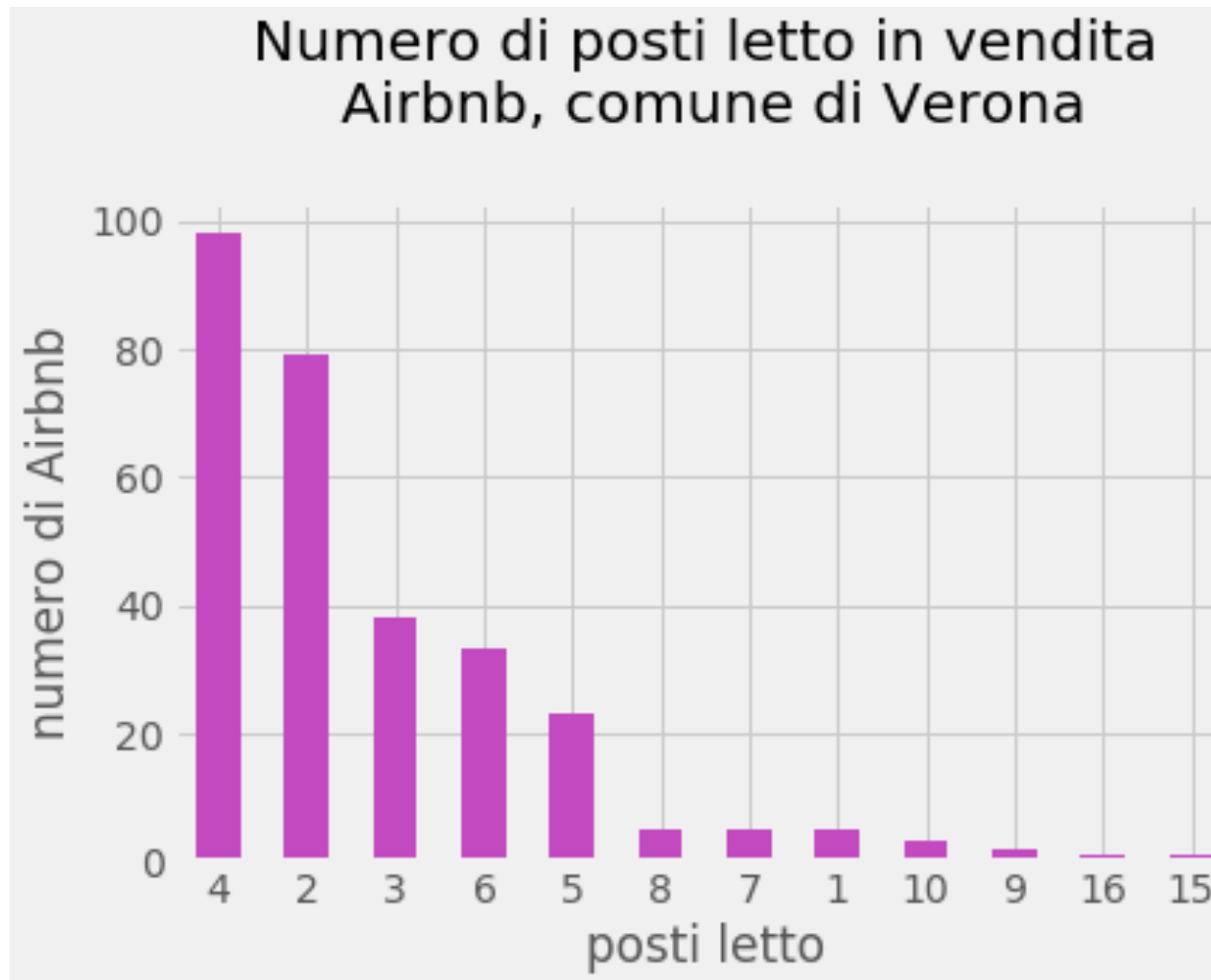
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Focus su canale

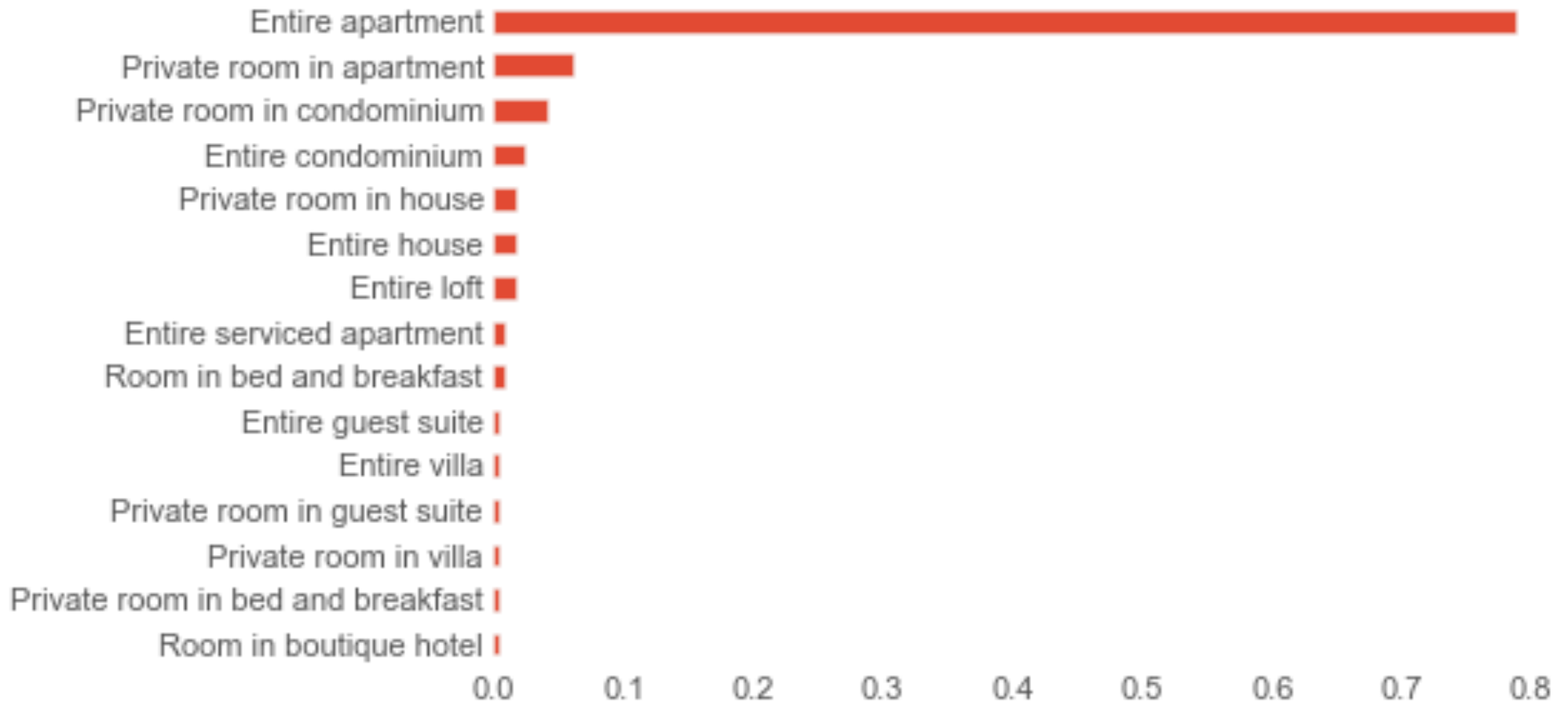
Airbnb

Disponibilità

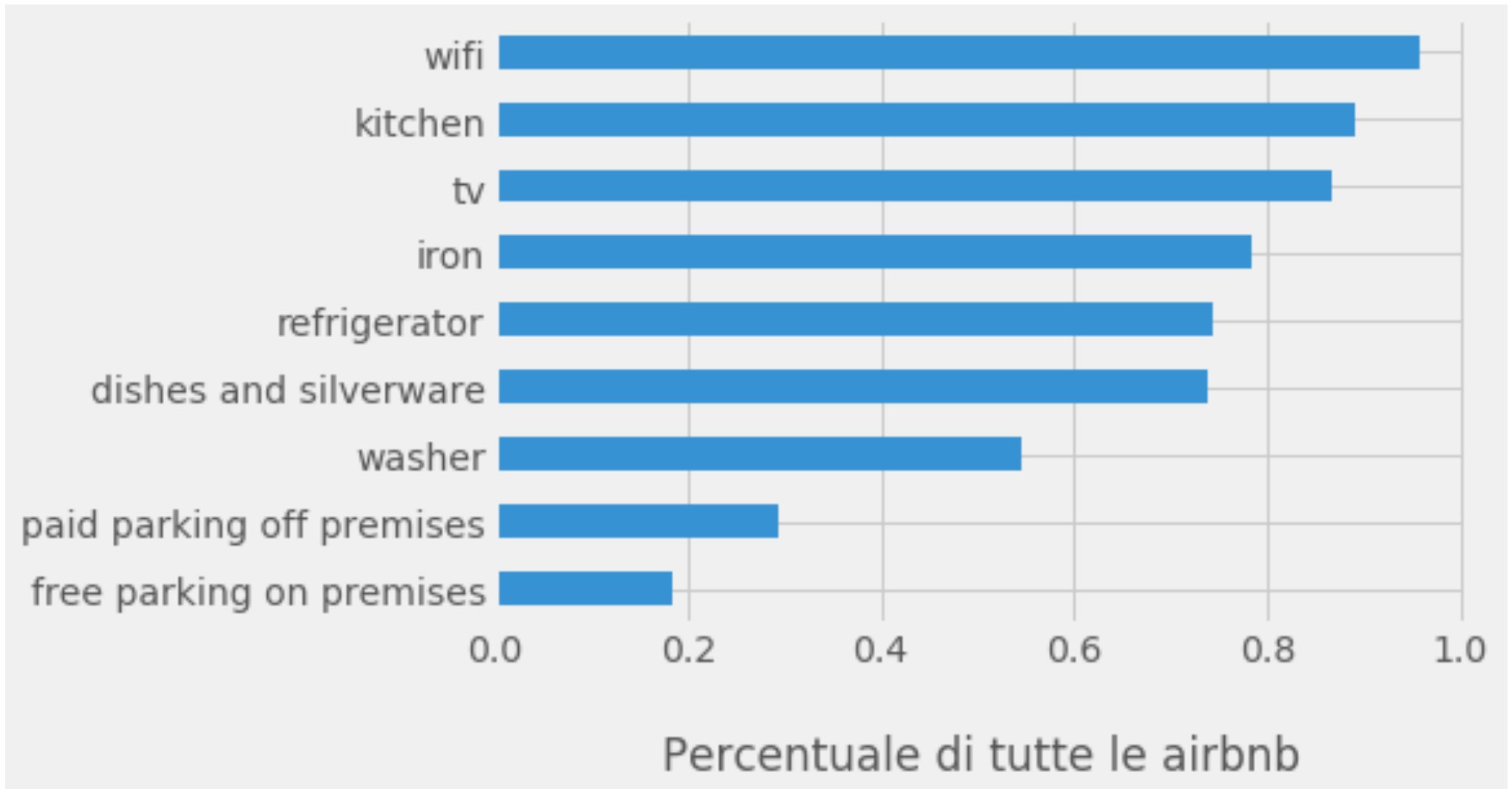
- numero di **strutture per numero di posti letto in vendita**, *airBnB* [es. 12/15 Marzo, @ 11 Gennaio]



Auto-descrizione struttura (i)



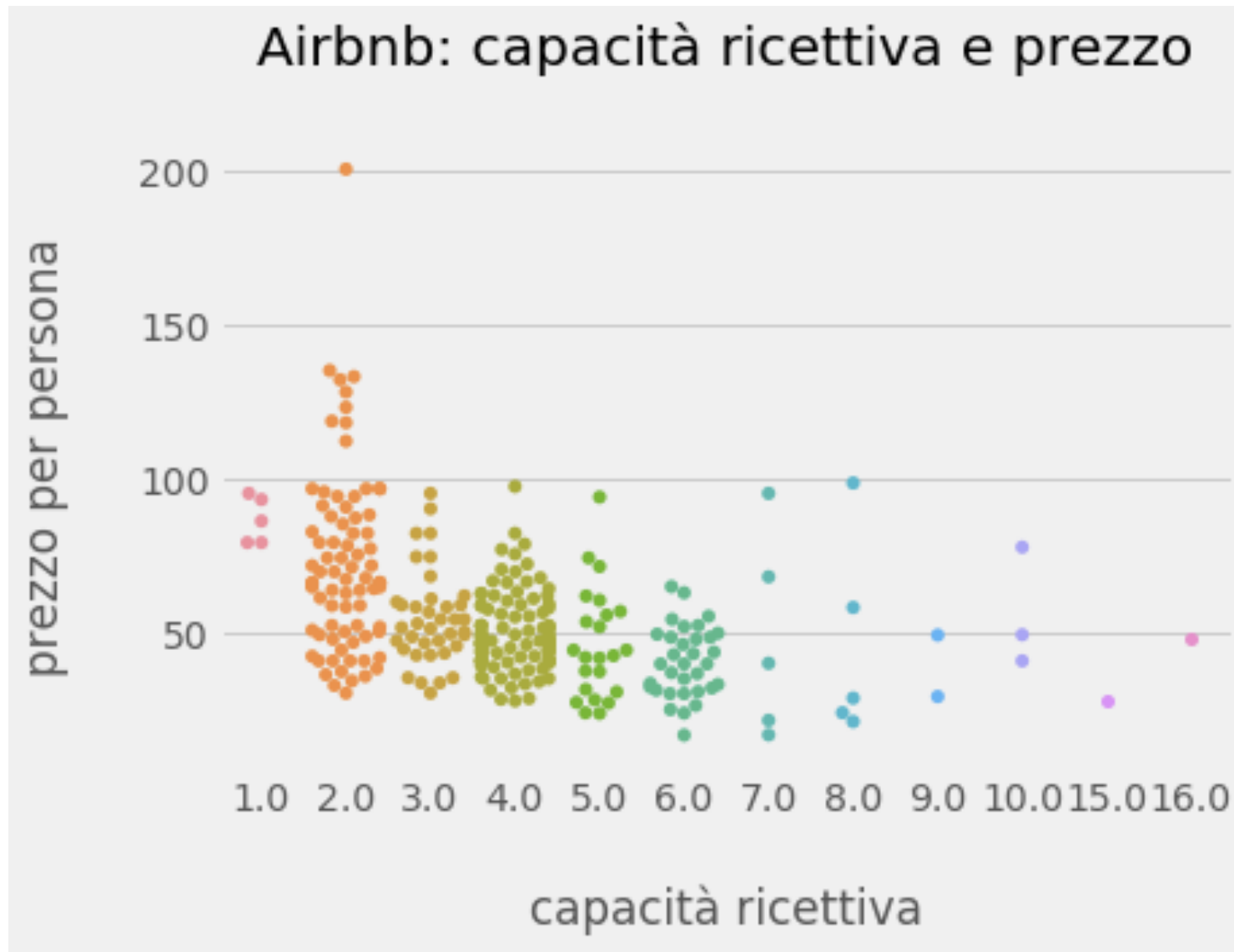
Auto-descrizione struttura (ii)



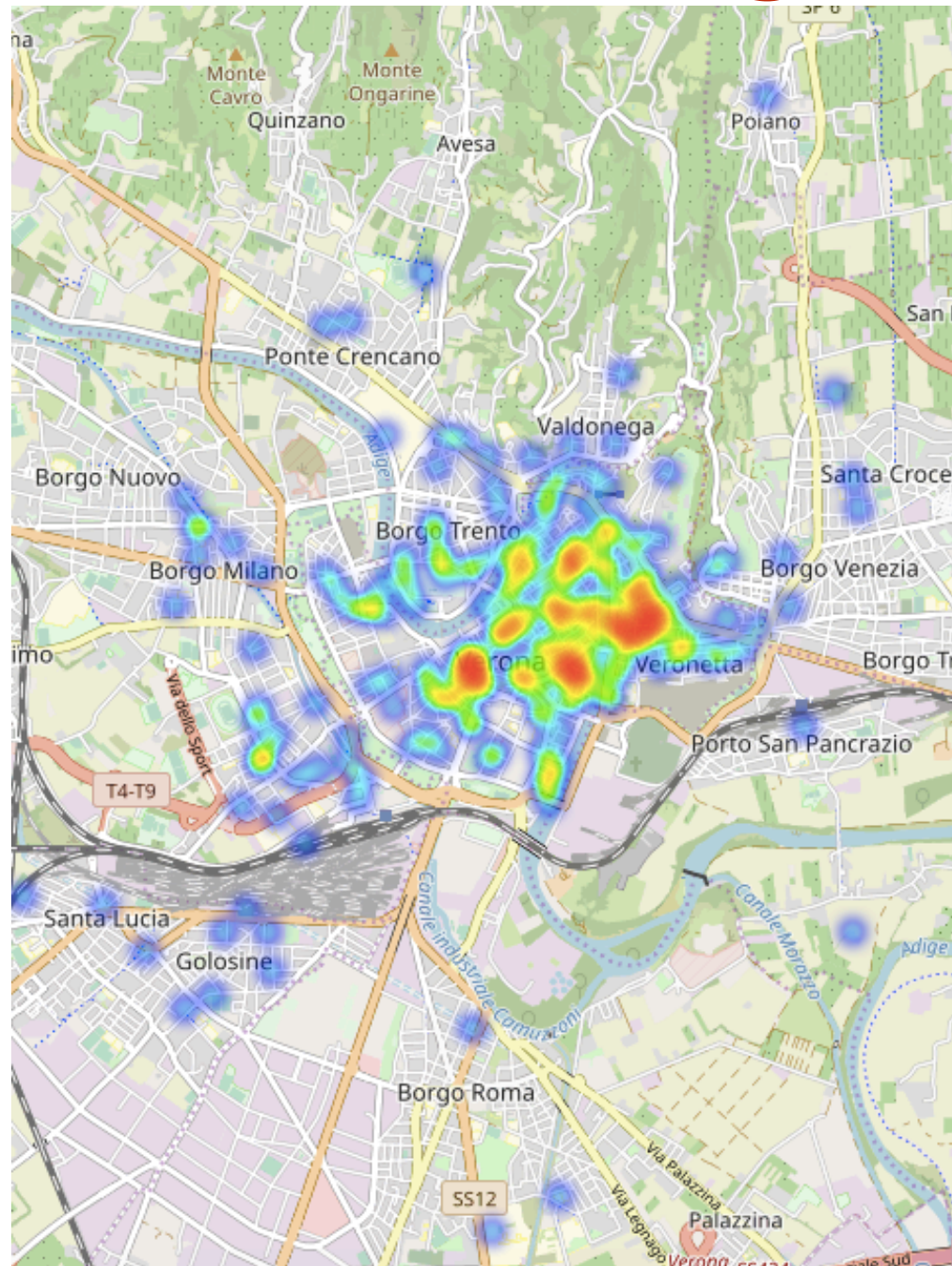
Auto-descrizione struttura (iii)

	room_type	person_capacity	amenities
	entire_home	6.0	Kitchen,Wifi,Breakfast,Iron,Hangers,Hair dryer,Shampoo,Washer,TV,Laptop-friendly workspace,Heating,Essentials,Hot water,Dishes and silverware,Host greets yo
	entire_home	2.0	Kitchen,Wifi,Breakfast,Iron,Hangers,Hair dryer,Washer,TV,Heating,Air conditioning,Essentials,Hot water
t	private_room	2.0	Kitchen,Wifi,Breakfast,Iron,Hangers,Hair dryer,Shampoo,TV,Laptop-friendly workspace,Heating,Essentials,Hot water,Single level home,Free street parking,Coffee i
	entire_home	4.0	Kitchen,Wifi,Breakfast,Hangers,Hair dryer,Shampoo,TV,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Crib,High chair,Paid parking on premises,Si
	entire_home	3.0	Kitchen,Wifi,Breakfast,Hair dryer,Shampoo,TV,Heating,Air conditioning,Essentials,Hot water,Crib,Pack 'n Play/travel crib,Coffee maker,Cooking basics,Dishes and
	entire_home	3.0	Kitchen,Wifi,Breakfast,Iron,Hangers,Hair dryer,Shampoo,Washer,TV,Laptop-friendly workspace,Heating,Essentials,Hot water,Paid parking on premises,Coffee mak
ium	private_room	4.0	Wifi,Breakfast,Hangers,Hair dryer,Shampoo,Heating,Air conditioning,Essentials,Hot water,Private living room,Lock on bedroom door
	entire_home	6.0	Kitchen,Indoor fireplace,Wifi,Dryer,Breakfast,Iron,Hangers,Hair dryer,Shampoo,Washer,TV,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Hot wate
	entire_home	3.0	Free parking on premises,Kitchen,Breakfast,Hangers,Hair dryer,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Hot water,Single level home,Cookin
	entire_home	2.0	Kitchen,Wifi,Breakfast,Iron,Hangers,Hair dryer,Shampoo,TV,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Hot water,Paid parking on premises,Fre
	entire_home	2.0	Free parking on premises,Elevator,Kitchen,Wifi,Breakfast,Iron,Hangers,Hair dryer,Shampoo,TV,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Hot v
	entire_home	6.0	Elevator,Kitchen,Wifi,Breakfast,Iron,Hangers,Hair dryer,TV,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Hot water,Bathtub,Paid parking on premi
reak	private_room	2.0	Kitchen,Wifi,Dryer,Breakfast,Iron,Hangers,Hair dryer,Shampoo,Washer,TV,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Hot water,Children's book
st	hotel_room	4.0	Elevator,Kitchen,Wifi,Breakfast,Iron,Hangers,Hair dryer,Shampoo,Washer,TV,Heating,Air conditioning,Essentials,Hot water,Crib,High chair,Pack 'n Play/travel crib,F
ium	private_room	2.0	Elevator,Wifi,Breakfast,Iron,Hangers,Hair dryer,Shampoo,Heating,Air conditioning,Essentials,Hot water,Paid parking on premises,Free street parking,Luggage drop
ium	private_room	2.0	Wifi,Breakfast,Hangers,Hair dryer,Shampoo,Laptop-friendly workspace,Heating,Essentials,Hot water,Coffee maker,Bed linens,Extra pillows and blankets,Lock on l
t	private_room	2.0	Free parking on premises,Elevator,Wifi,Breakfast,Iron,Hangers,Hair dryer,Shampoo,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Lock on bedroo
	entire_home	7.0	Kitchen,Wifi,Cable TV,Breakfast,Iron,Hangers,Hair dryer,Shampoo,TV,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Hot water,Babysitter recomme
	entire_home	4.0	Kitchen,Wifi,Breakfast,Hangers,Shampoo,Washer,TV,Heating,Air conditioning,Essentials,Lockbox,Private entrance
	entire_home	4.0	Free parking on premises,Elevator,Kitchen,Wifi,Breakfast,Iron,Hangers,Hair dryer,Shampoo,TV,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Hot v
	entire_home	6.0	Kitchen,Breakfast,Iron,Hangers,Hair dryer,TV,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Carbon monoxide alarm
t	private_room	2.0	Elevator,Kitchen,Wifi,Dryer,Breakfast,Iron,Hangers,Hair dryer,Shampoo,Washer,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Ethernet connector
	entire_home	4.0	Free parking on premises,Kitchen,Wifi,Breakfast,Hangers,Hair dryer,Shampoo,TV,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Hot water,Childre
	private_room	2.0	Free parking on premises,Kitchen,Wifi,Breakfast,Iron,Hangers,Hair dryer,Shampoo,Washer,TV,Laptop-friendly workspace,Heating,Air conditioning,Essentials,Priva
	entire_home	6.0	Kitchen,Breakfast,Iron,Hangers,Hair dryer,Shampoo,TV,Laptop-friendly workspace,Heating,Essentials,Hot water,Single level home,Free street parking,Coffee maker

Prezzi



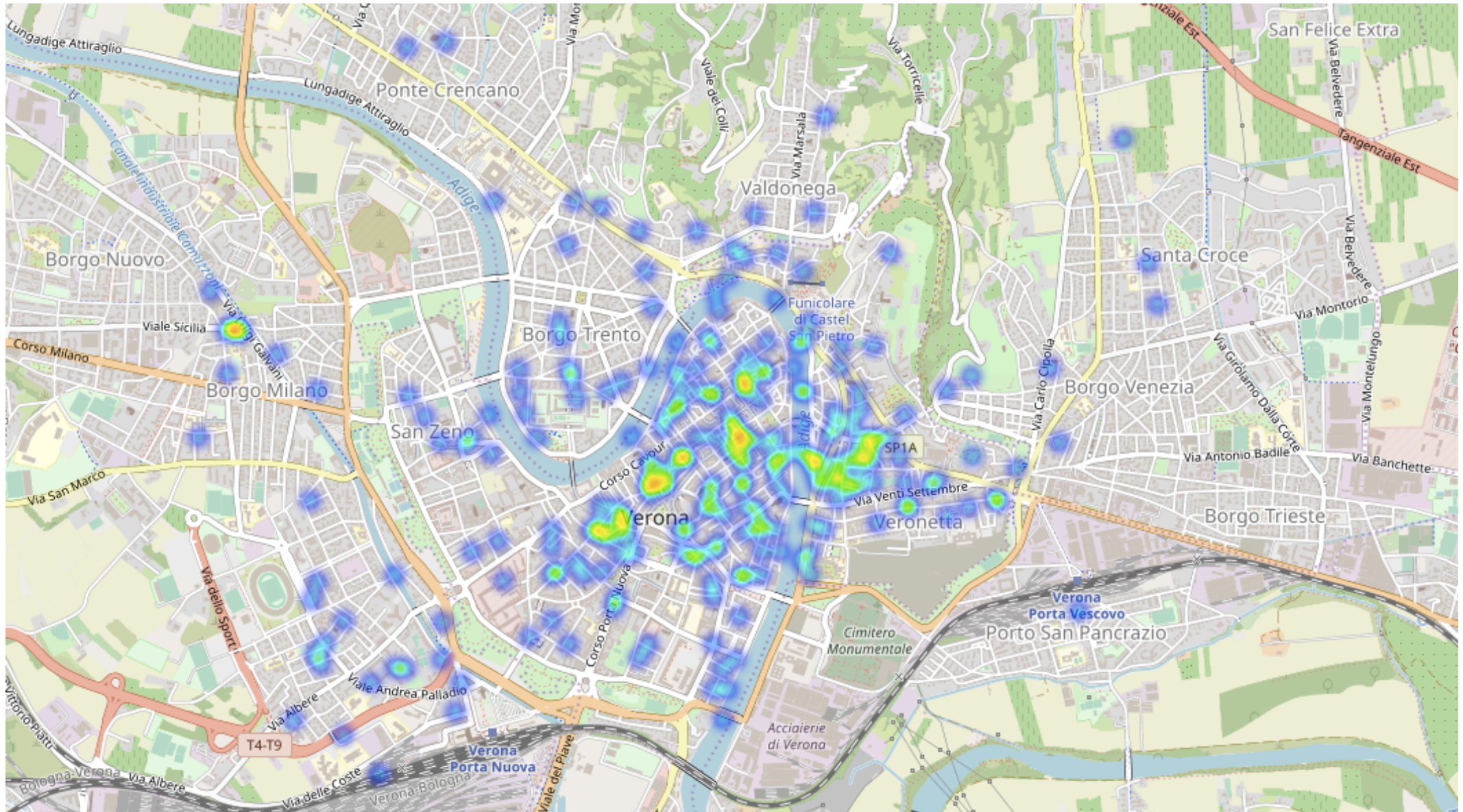
Distribuzione e micro-geo tagging (i)



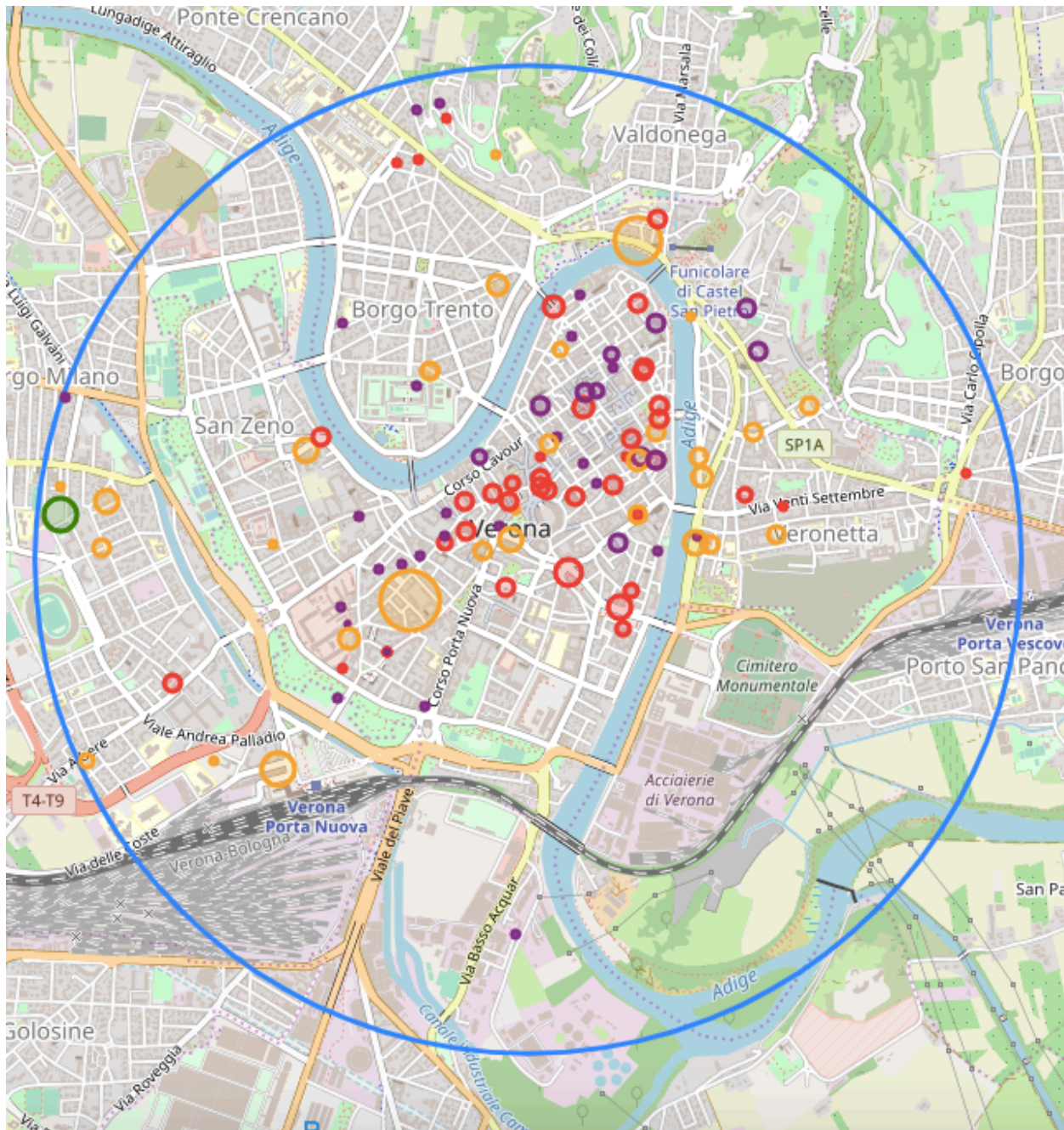
Produzione di **mappe navigabili** geo tagged con caratteristiche quali: nome, numero di posti letto in vendita, prezzo



Distribuzione e micro-geo tagging (ii)



Distribuzione e micro-geo tagging (iii)



Colore = fascia di prezzo

Dimensioni = numero di posti letto in vendita

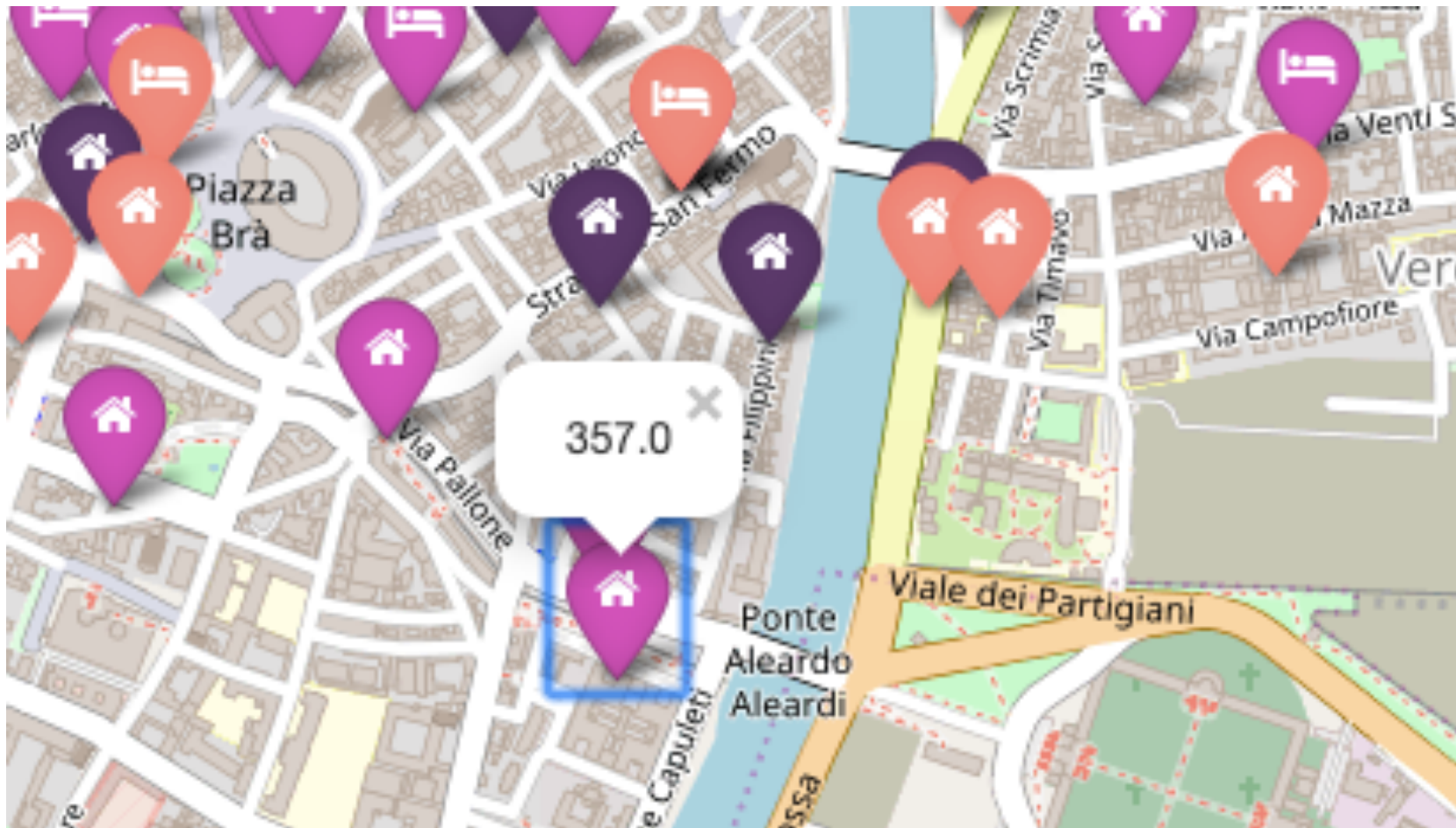
Geo-localizzazione customizzabile



Zooming-in (nome)



Zooming-in (auto-descrizione, prezzo)





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Esperienza Clienti

2 anni di reviews sul canale booking

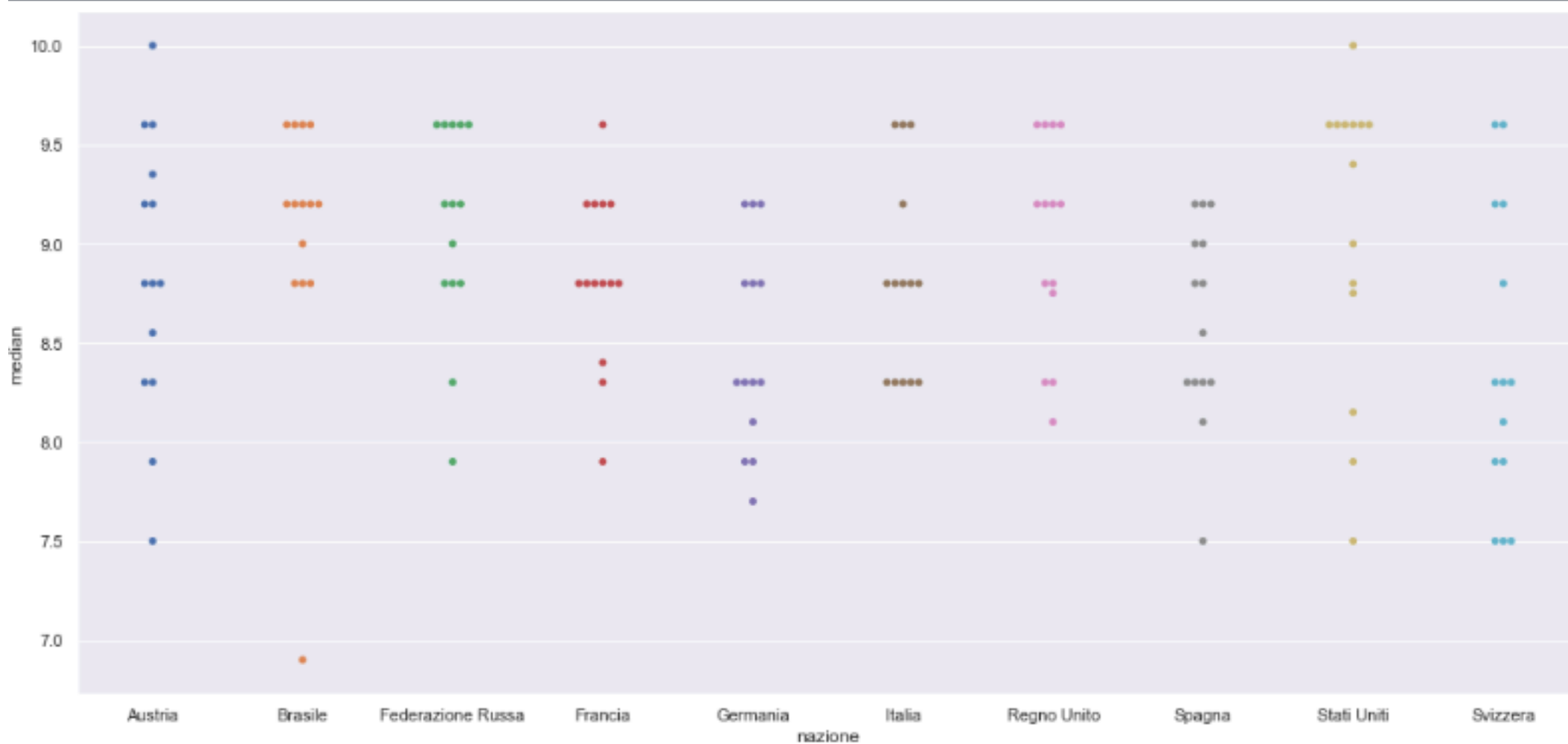
Principali nazionalità, # reviews

```
Italia 4168
Germania 1142
Federazione Russa 894
Regno Unito 800
Francia 628
Spagna 504
Svizzera 444
Austria 331
Brasile 316
Stati Uniti 292
Paesi Bassi 194
Australia 162
Belgio 133
Argentina 126
Polonia 126
Israele 109
Portogallo 94
Svezia 93
Irlanda 89
Repubblica Ceca 74
Grecia 72
Ungheria 71
Canada 71
Cina 63
Norvegia 63
Croazia 59
Ucraina 54
Romania 51
Turchia 51
Name: nazione, dtype: int64
```



Voto per nazionalità provenienza

☐ 24 mesi di voti e review su booking: 14 hotel; 121 nazionalità



Text mining: cloud, italiano



Text mining: cloud, inglese

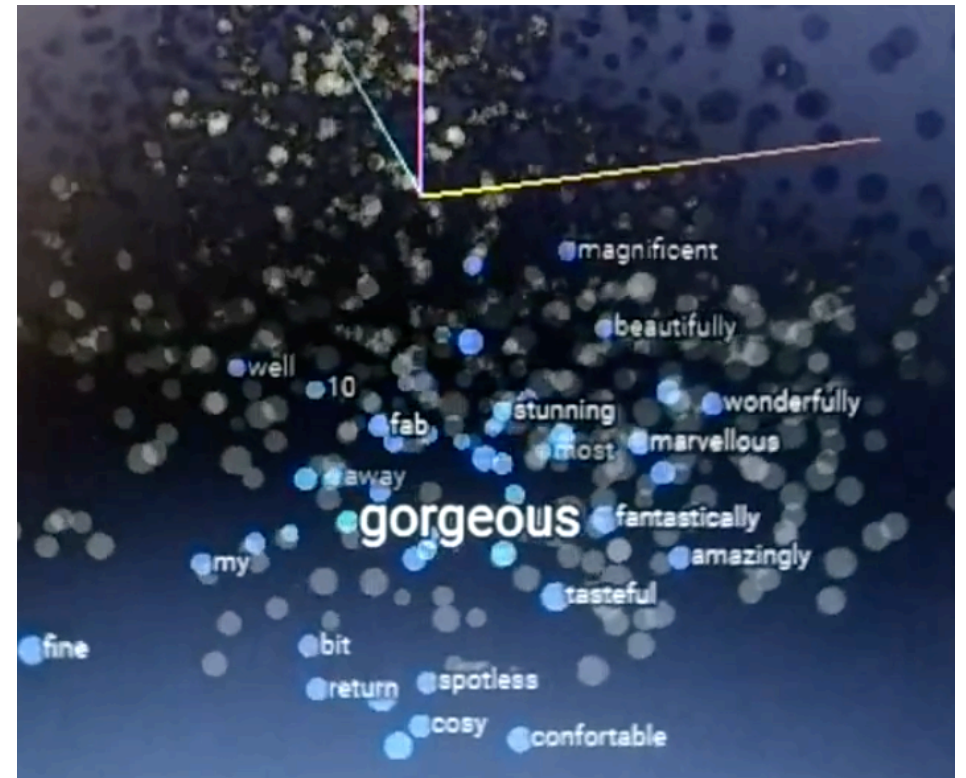
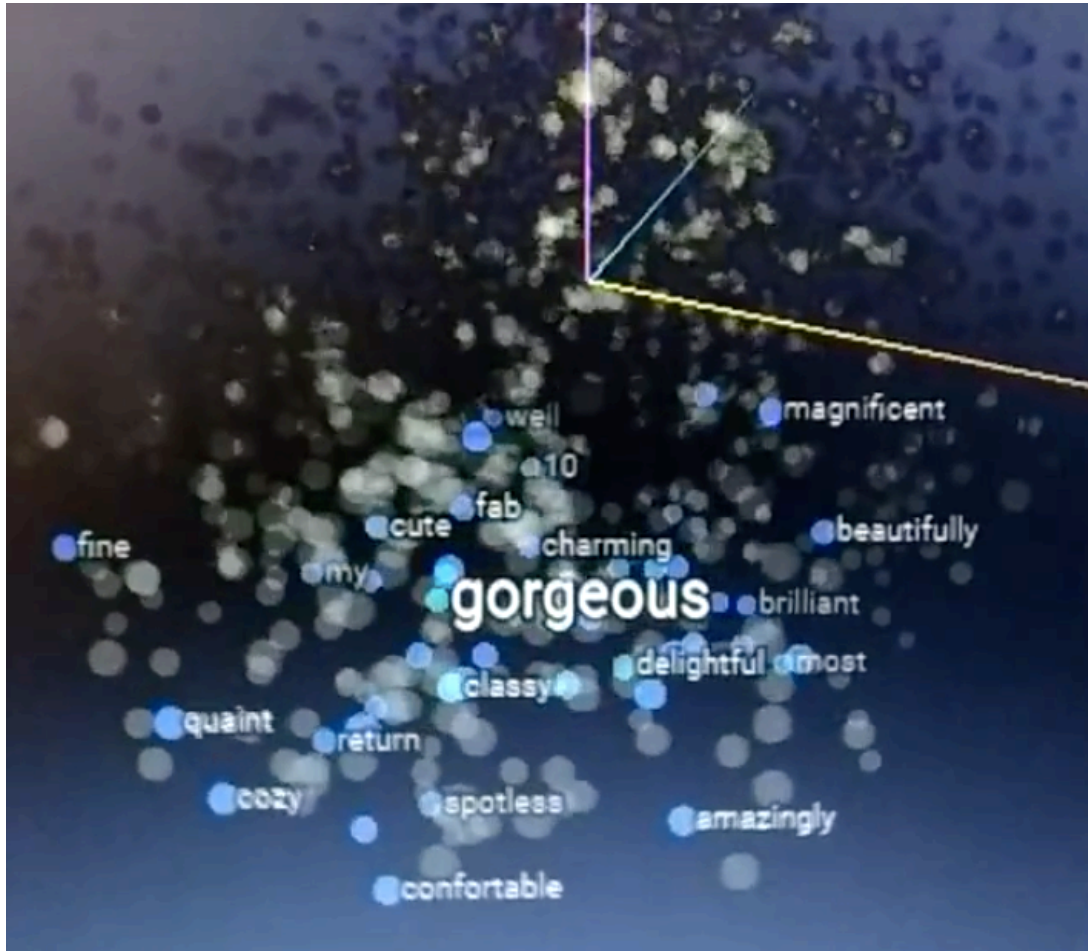


Text mining: analisi relazionali

	parola	tag	pos	root	root1
380	buona	ADJ	amod	colazione	colazione
483	scarsa	ADJ	amod	colazione	colazione
492	<u>spento</u>	ADJ	conj	colazione	colazione
1517	<u>scarsa</u>	ADJ	amod	colazione	colazione
1648	<u>carente</u>	ADJ	amod	colazione	colazione
1706	sufficiente	ADJ	amod	Colazione	colazione
1732	Prima	ADJ	amod	colazione	colazione
1753	Prima	ADJ	amod	colazione	colazione
1800	<u>migliorabile</u>	ADJ	amod	Colazione	colazione
1938	accurata	ADJ	amod	Colazione	colazione
2066	<u>scarsa</u>	ADJ	amod	colazione	colazione
2144	<u>prima</u>	ADJ	amod	colazione	colazione



Deep Learning / semantic AI





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*per domande e informazioni sulle possibilità di analisi
dati del team CSSC nel settore ospitalità*

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