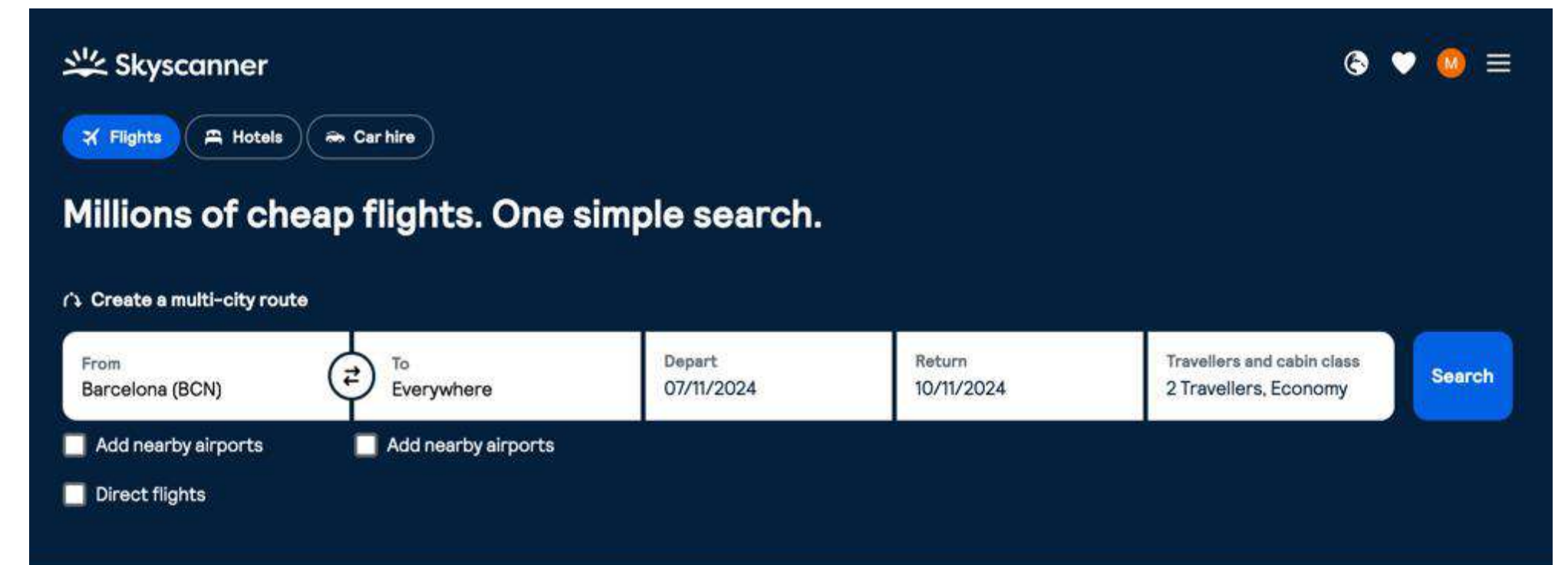
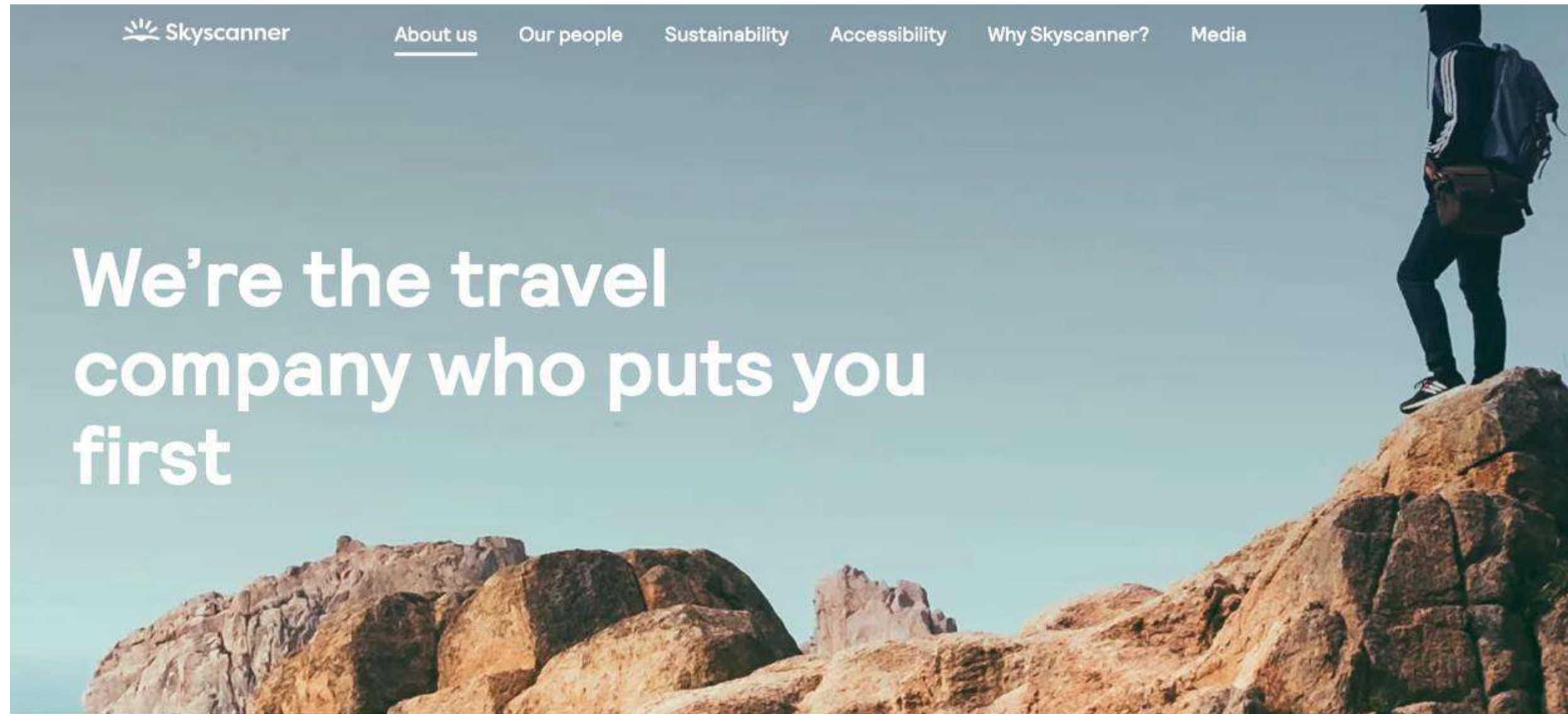


Journey to Centralising Destination Recommendations

Maria Prosviryakova, Gaurav Misra, Sébastien Le Digabel, Rodrigo Villatoro

Skyscanner



Travel your way

When we started in 2003, we set out to do things differently. We wanted to show travellers all flight options in one place, creating a simple alternative to the confusing sites that make travel feel like hard work.

Fast forward to today and we're a global leader in travel, with more than 100 million people across the world using our app and website every month. We pride ourselves on being transparent and unbiased, searching billions of prices for flights, hotels and car hire to help find the best deals available.

We're on a mission to help travellers plan and book their trip with ease and confidence. Whether it's using technology to make the complex simple or connecting travellers with trusted partners to provide honest and transparent solutions, we're determined to help everyone find the best offer for them.



Flight deals from Spain

Here are the flight deals with the lowest prices. Act fast – they all depart within the next three months.

Destination	Flight Details	Price
Palma, Spain	<p>Sun, 1 Dec Direct</p> <p>ALC - PMI with Vueling Airlines</p>	from 14 € >
Bordeaux, France	<p>Sat, 7 Dec Direct</p> <p>BCN - BOD with Vueling Airlines</p>	from 22 € >
Milan, Italy	<p>Sat, 30 Nov Direct</p> <p>BCN - MXP with Vueling Airlines</p>	from 26 € >

Content




1. Recommendations in Skyscanner
2. Challenges
3. Centralised Architecture
4. Results

Examples of Skyscanner Recommendations

Hotels Homepage

Hotels for fab city breaks







The key to a great city break? A perfectly-placed base. Check out the best city centre hotels.

 London United Kingdom From 37 € a night	 Paris France From 46 € a night	 Rome Italy From 21 € a night
---	---	--

Flights Homepage



Flight deals from Spain

Here are the flight deals with the lowest prices. Act fast – they all depart within the next three months.


 Palma Spain Sat, 30 Nov VLC - PMI with Vueling Airlines Direct Wed, 4 Dec PMI - VLC with Vueling Airlines Direct from 15 €	 Bordeaux France Tue, 10 Dec BCN - BOD with Vueling Airlines Direct Thu, 12 Dec BOD - BCN with Vueling Airlines Direct from 21 €	 Milan Italy Tue, 10 Dec BCN - MXP with Vueling Airlines Direct Wed, 11 Dec MXP - BCN with Vueling Airlines Direct from 25 €
 Valletta Malta Tue, 10 Dec BCN - MLA with Vueling Airlines Direct Thu, 12 Dec MLA - BCN with Vueling Airlines Direct from 27 €	 Stockholm Sweden Wed, 4 Dec PMI - ARN with Ryanair Direct Wed, 11 Dec ARN - PMI with Ryanair Direct from 29 €	 Lisbon Portugal Thu, 28 Nov MAD - LIS with Ryanair Direct Mon, 2 Dec LIS - MAD with Ryanair Direct from 30 €

Carhire Homepage

Popular car rental destinations

 Car hire in Milan Most popular car type: Economy From 5 € per day	 Car hire in Catania Most popular car type: Economy From 5 € per day	 Car hire in Rome Most popular car type: Economy From 6 € per day
--	--	---







Everywhere Explore




Barcelona - Everywhere - Nov - Nov - 1 Adult

Explore everywhere in November

Cheapest flights | Direct flights | Suggested for you | Underrated destinations | Beach | Art and culture | Great food | Outdoor adventures

 Spain Flights from Direct 23 €	 Italy Flights from Direct 30 €	 United Kingdom Flights from Direct 30 €
 France Flights from Direct 27 €	 Germany Flights from Direct 34 €	 United States Flights from 1+ stops 263 €







Country Explore



Barcelona - Italy - Nov - Nov - 1 Adult

Explore Italy in November




Cheapest flights | Direct flights | Suggested for you | Underrated destinations | Beach | Art and culture | Great food | Nightlife and entertainment

 Rome Flights • Direct Hotels • 4 stars 44 € 52 €	 Milan Flights • Direct Hotels • 4 stars 30 € 58 €	 Venice Flights • Direct Hotels • 4 stars 42 € 48 €
 Naples Flights • Direct Hotels • 4 stars 47 € 52 €	 Bologna Flights • Direct Hotels • 4 stars 37 € 45 €	 Florence Flights • Direct Hotels • 4 stars 73 € 60 €

Carhire SEO page

Airport car rental with Europcar

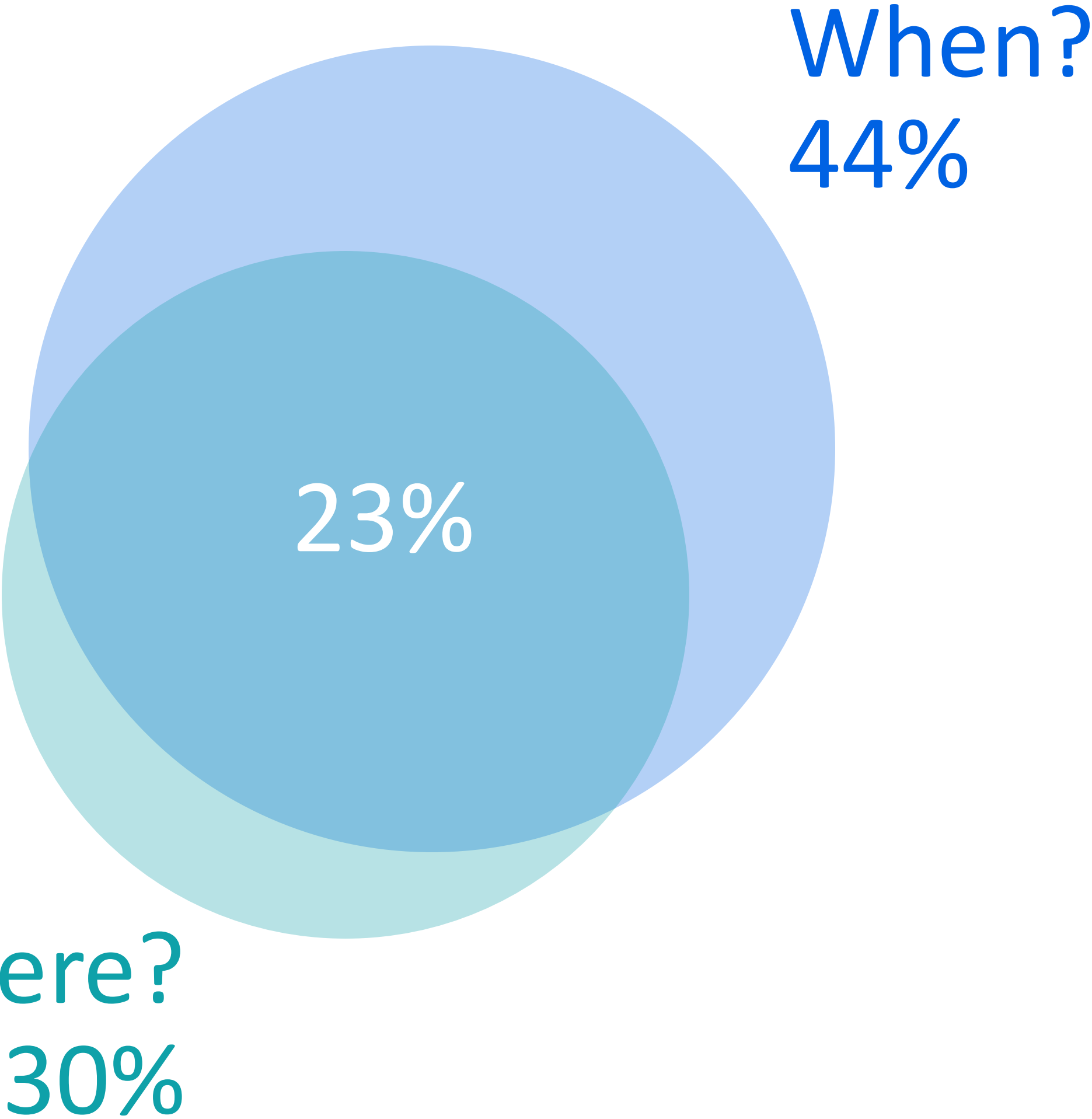
Want to get your wheels straight after touchdown? Take a look at the most popular airport car rental locations.

 Car hire at Lisbon Airport From 56 € per day	 Car hire at Faro Airport From 60 € per day	 Car hire at Palma - Majorca Airport From 42 € per day
--	--	---

Users come in with the **specifics**, but are still open to **new ideas**

51%

of users are exploring



Source: n = 92,340, % selected; multiple choice
Q2: Why are you visiting Skyscanner today ?

Objective:
Increase adoption of recommendations

Challenges

Different traveller search intents

Everywhere from Bari

Explore everywhere from Mon 21 to Fri 25 October

Cheapest flights | Direct flights | **Suggested for you** | Underrated destinations | Beach | Art and culture | Great food | Outdoor adventures | Nightlife

Destination	Flights from	Price
Italy	Direct	35 €
Greece	Direct	61 €
Spain	1+ stops	73 €

Airport Europcar rental

Airport car rental with Europcar

Want to get your wheels straight after touchdown? Take a look at the most popular airport car rental locations.


Location	Price
Car hire at Lisbon Airport	From 56 € per day
Car hire at Faro Airport	From 60 € per day
Car hire at Palma - Majorca Airport	From 42 € per day

Hotels abroad

Hotels for fab city breaks

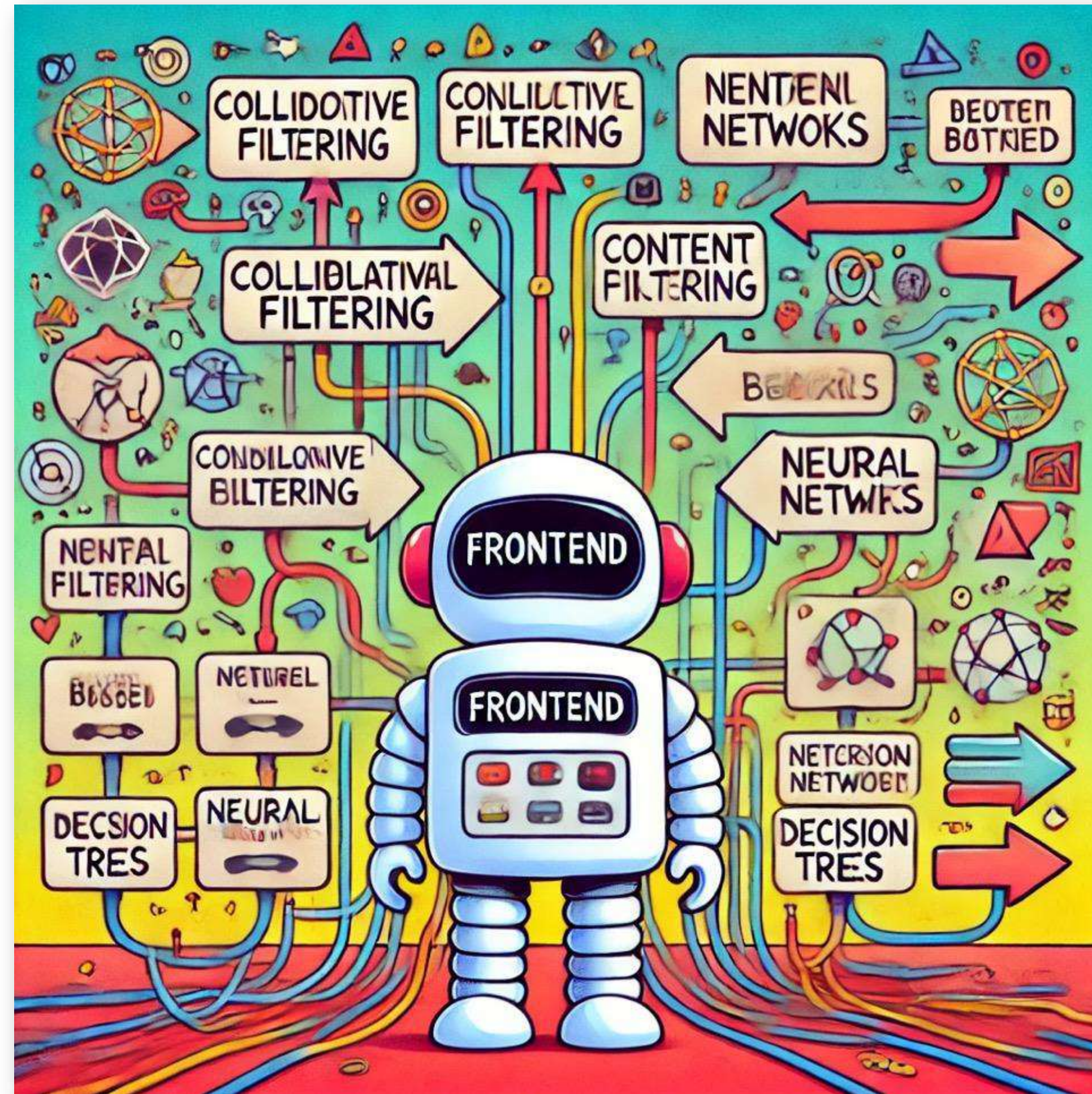
The key to a great city break? A perfectly-placed base. Check out the best city centre hotels.

City	Country	Price
Paris	France	From 59 € a night
Palma	Spain	From 110 € a night
Dublin	Ireland	From 42 € a night

 Country ,  Airport,  City recommendations

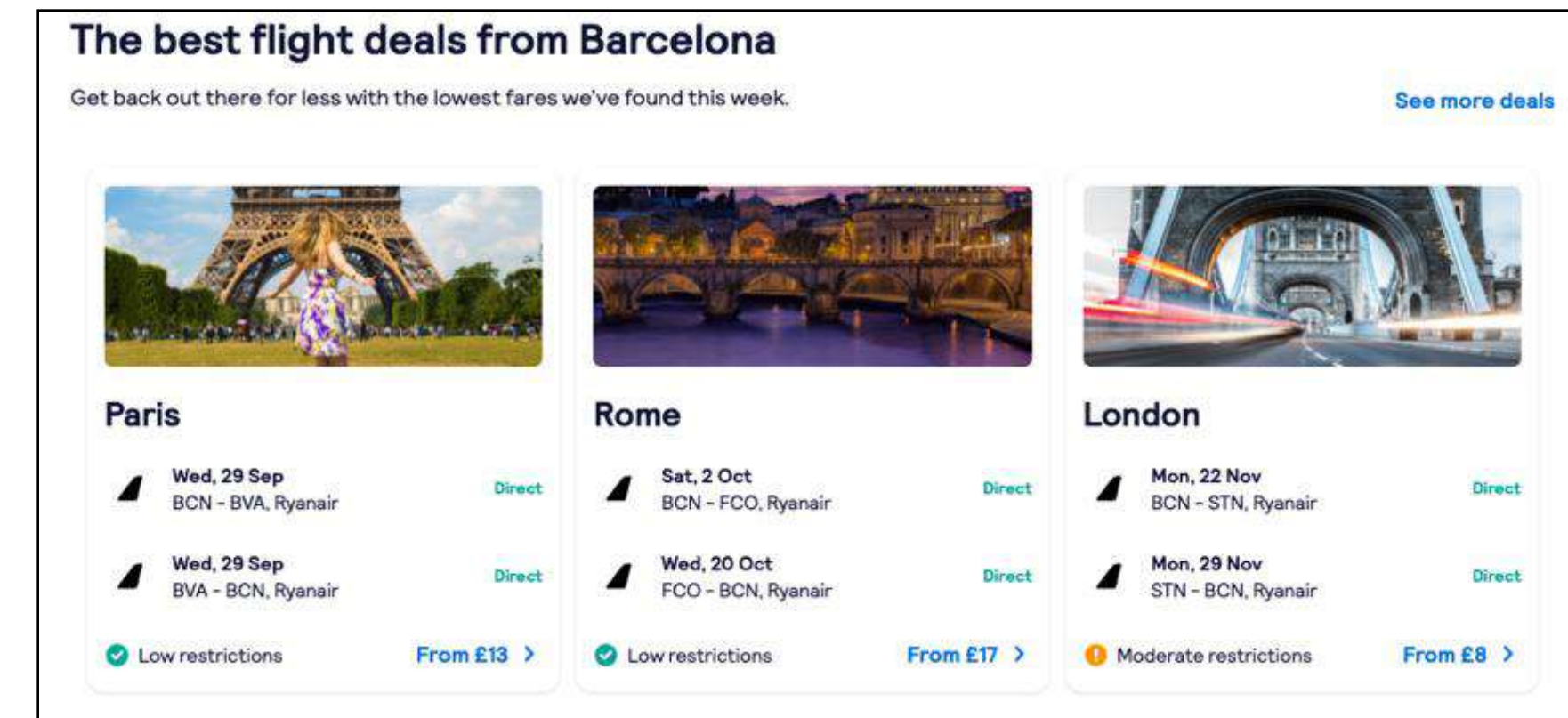
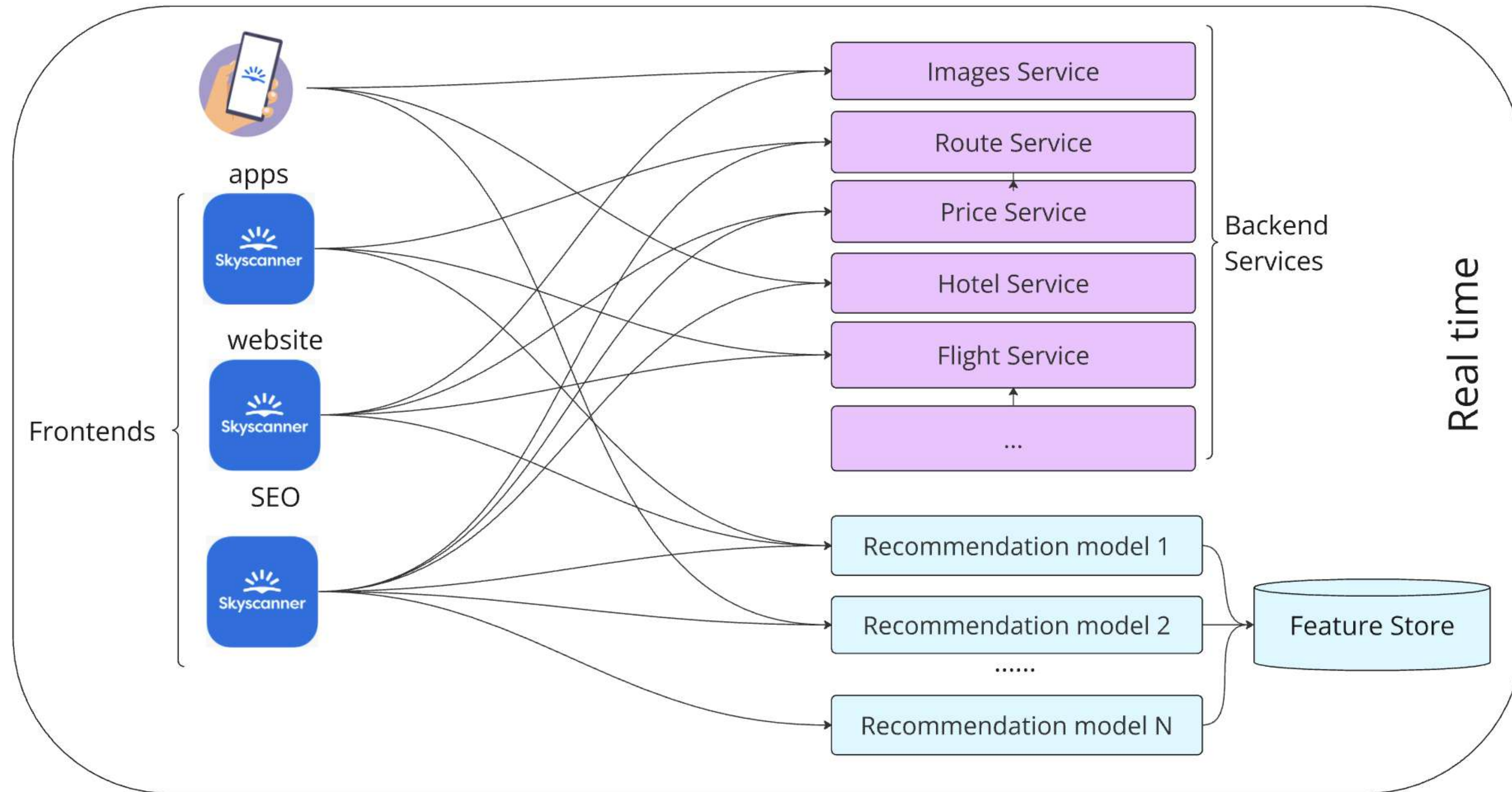
Selecting the right model

- ❖ What is the best model for my use-case?
- ❖ Degree of personalisation?
- ❖ Fallbacks?



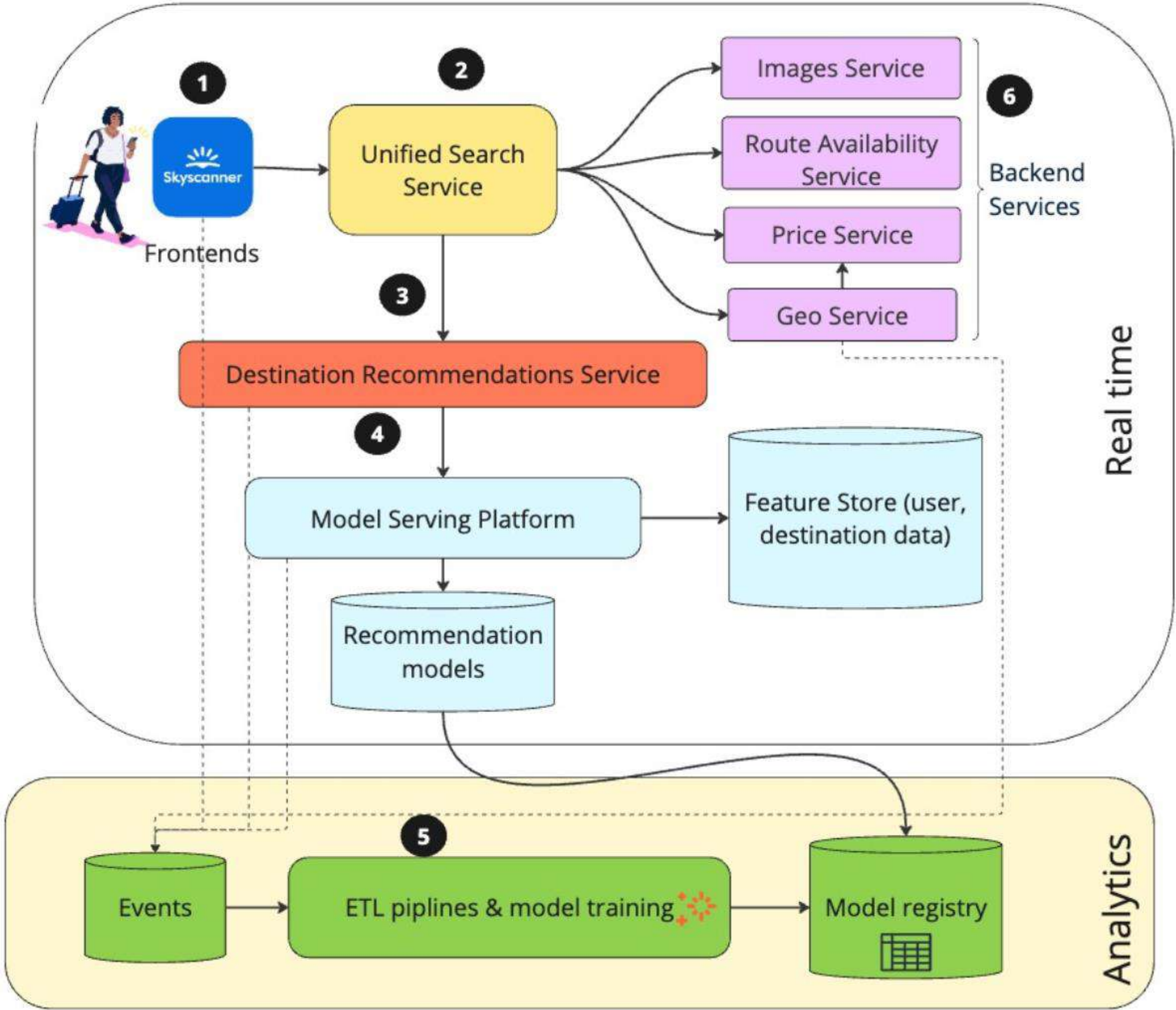
OpenAI generated image

Multiple isolated frontend integrations



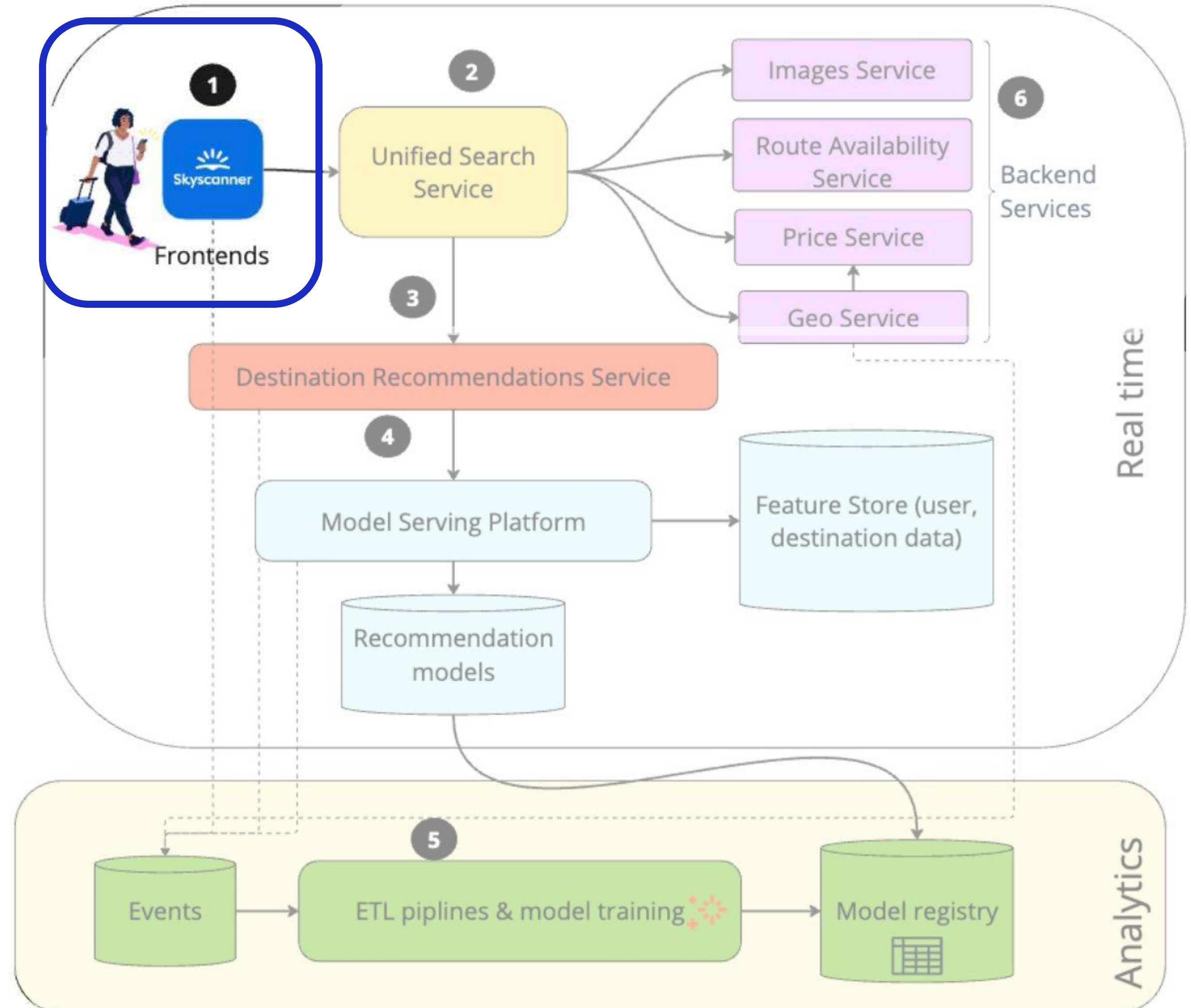
Centralised Architecture

Centralised Destination Recommendations Architecture



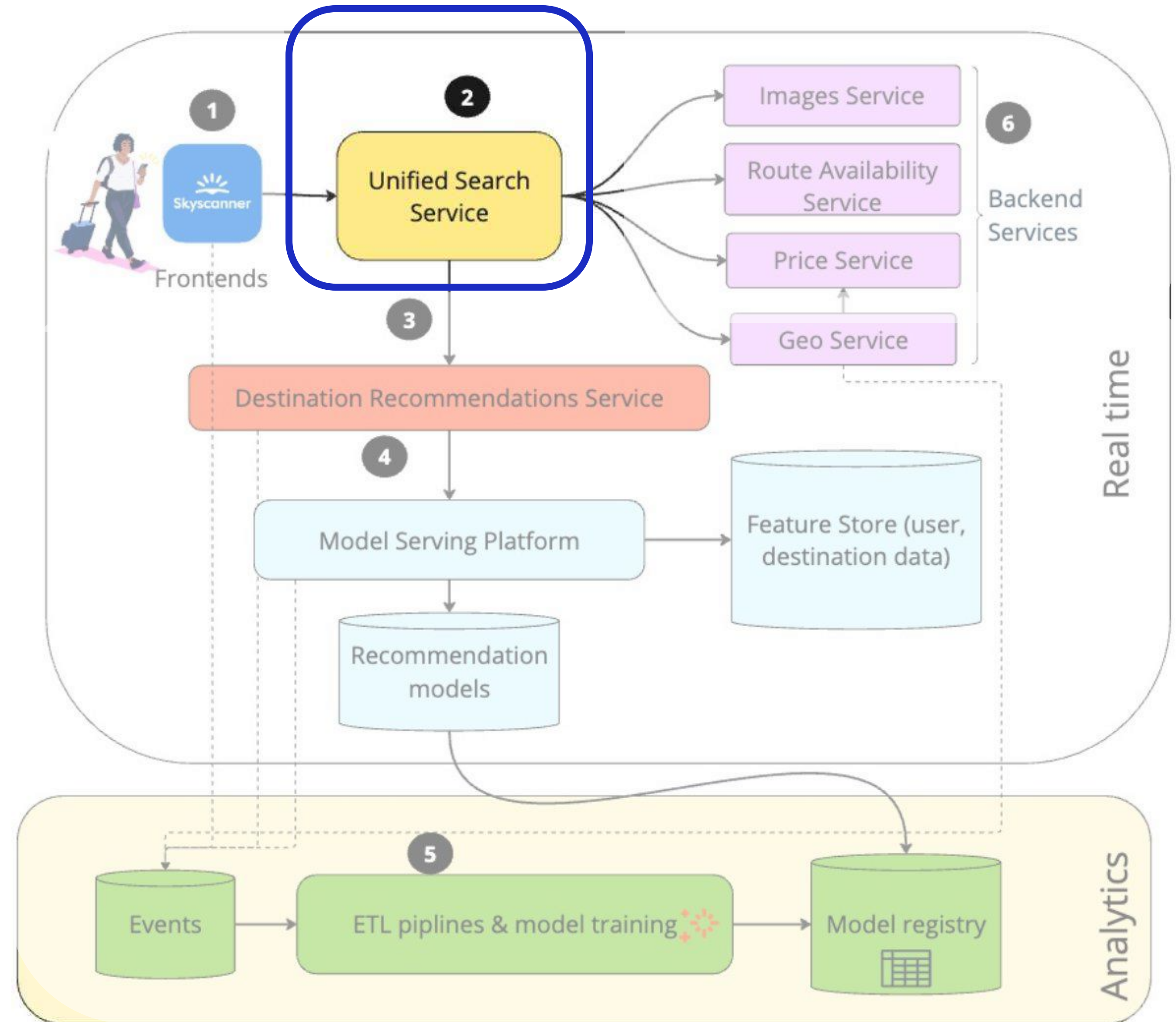
1. Skyscanner Exploration Frontends

- Capture traveller + search context



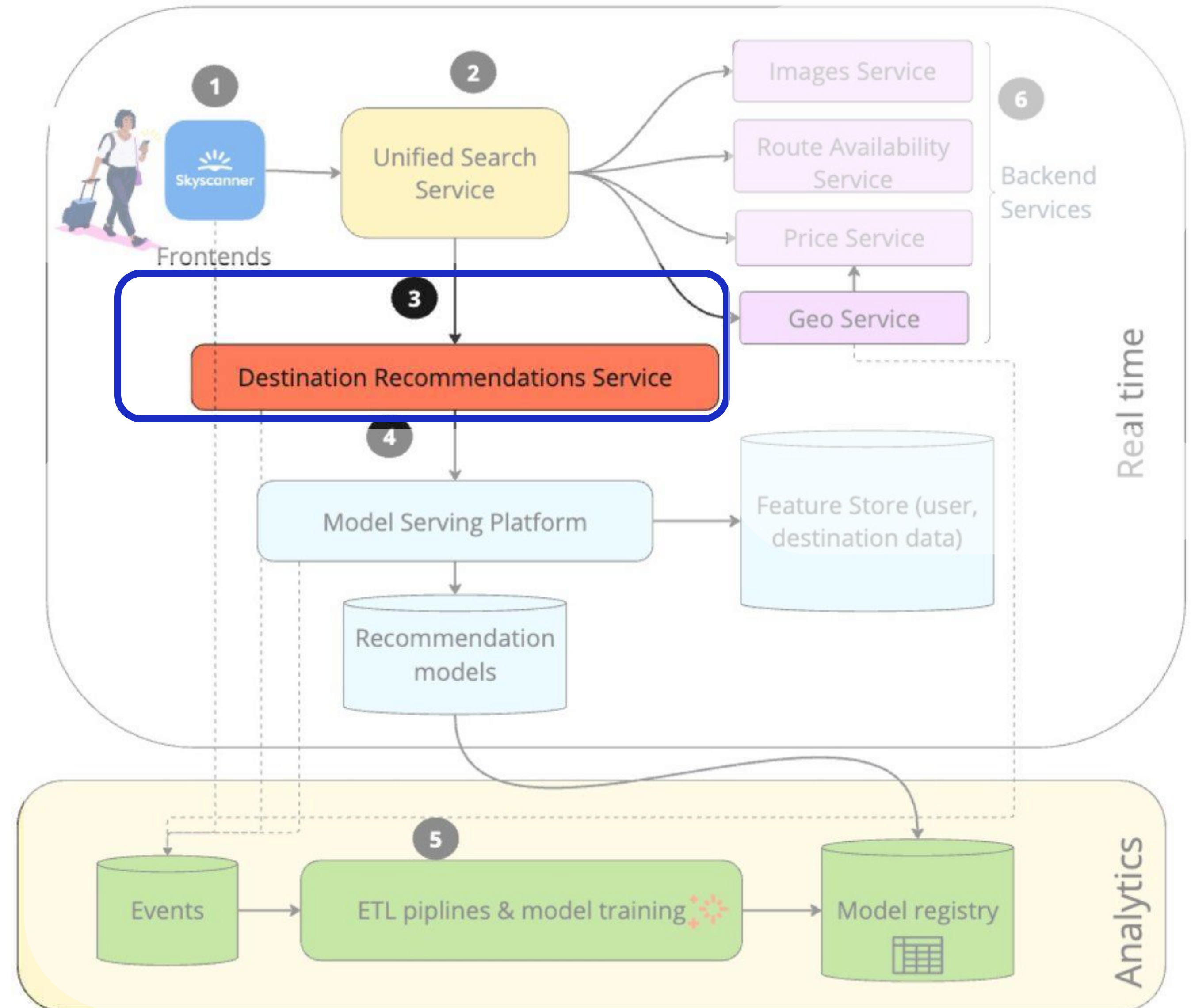
2. Unified Search Service

- Gateway to all related backends
- Standardised access



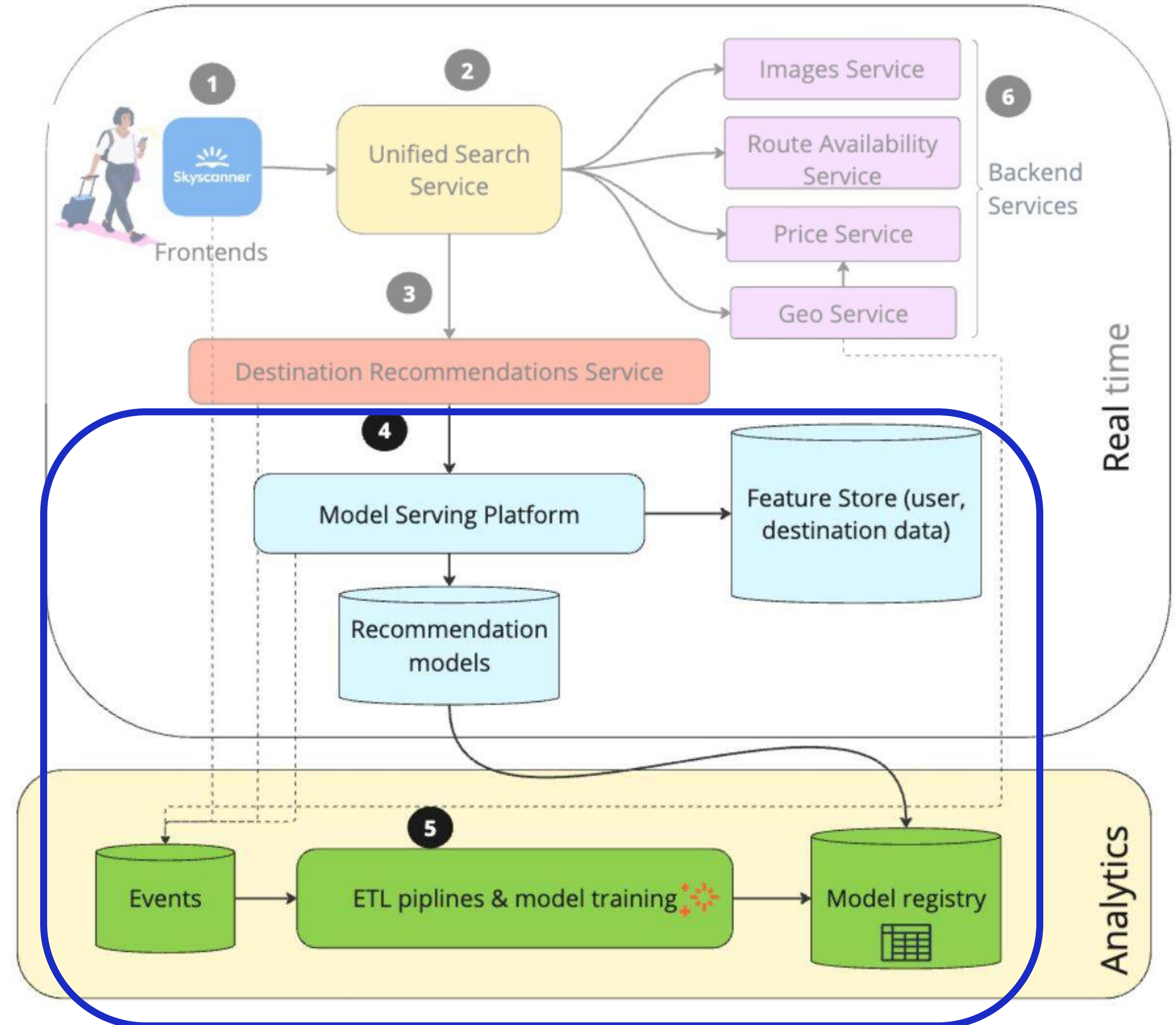
3. Destination Recommendations Service

- Interprets traveller's search intent
- Gets recommendations from the relevant model



4. Model Serving Platform

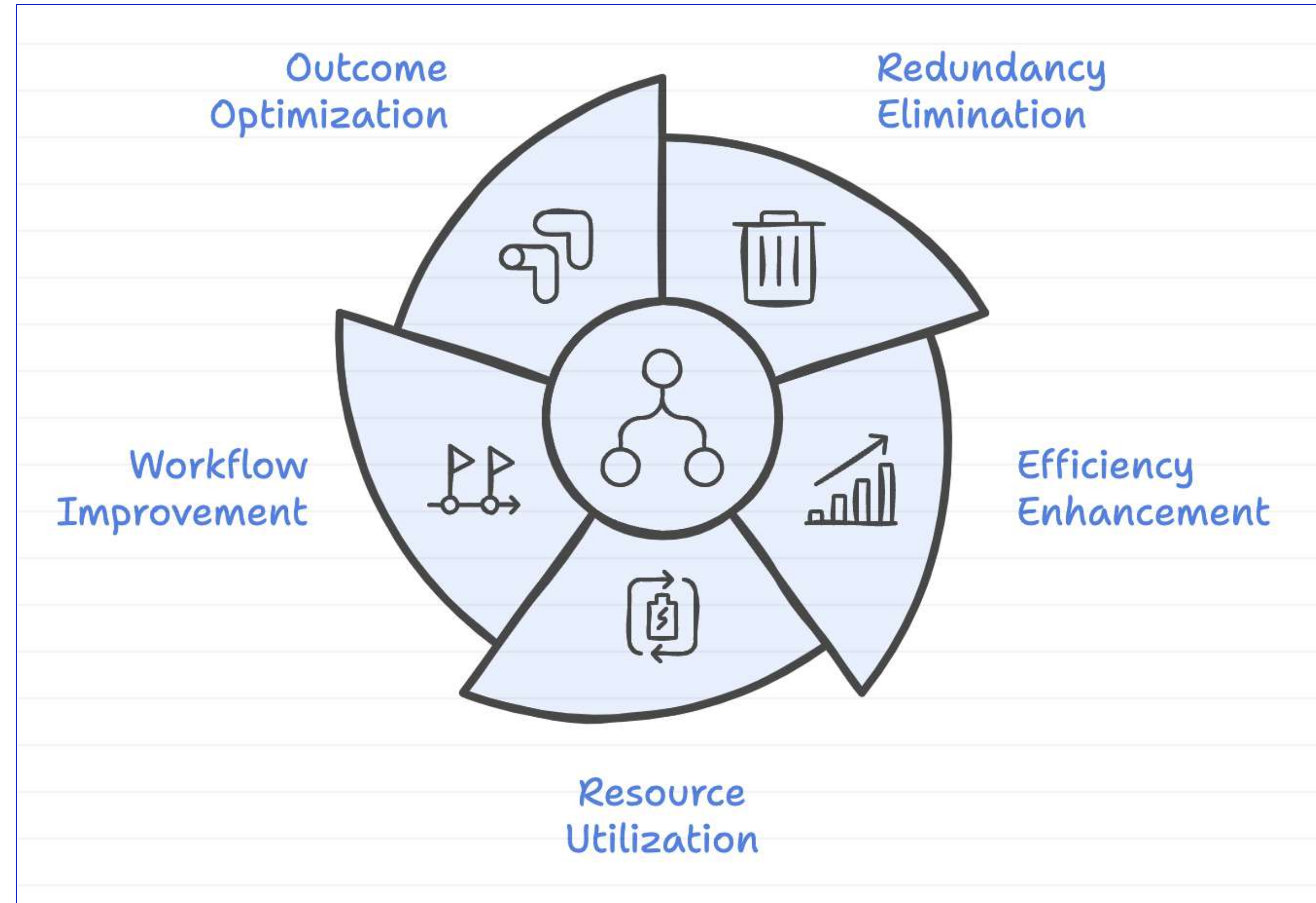
- Hosts ML models
- Real-time Feature Store
- Model request / response logs



Results

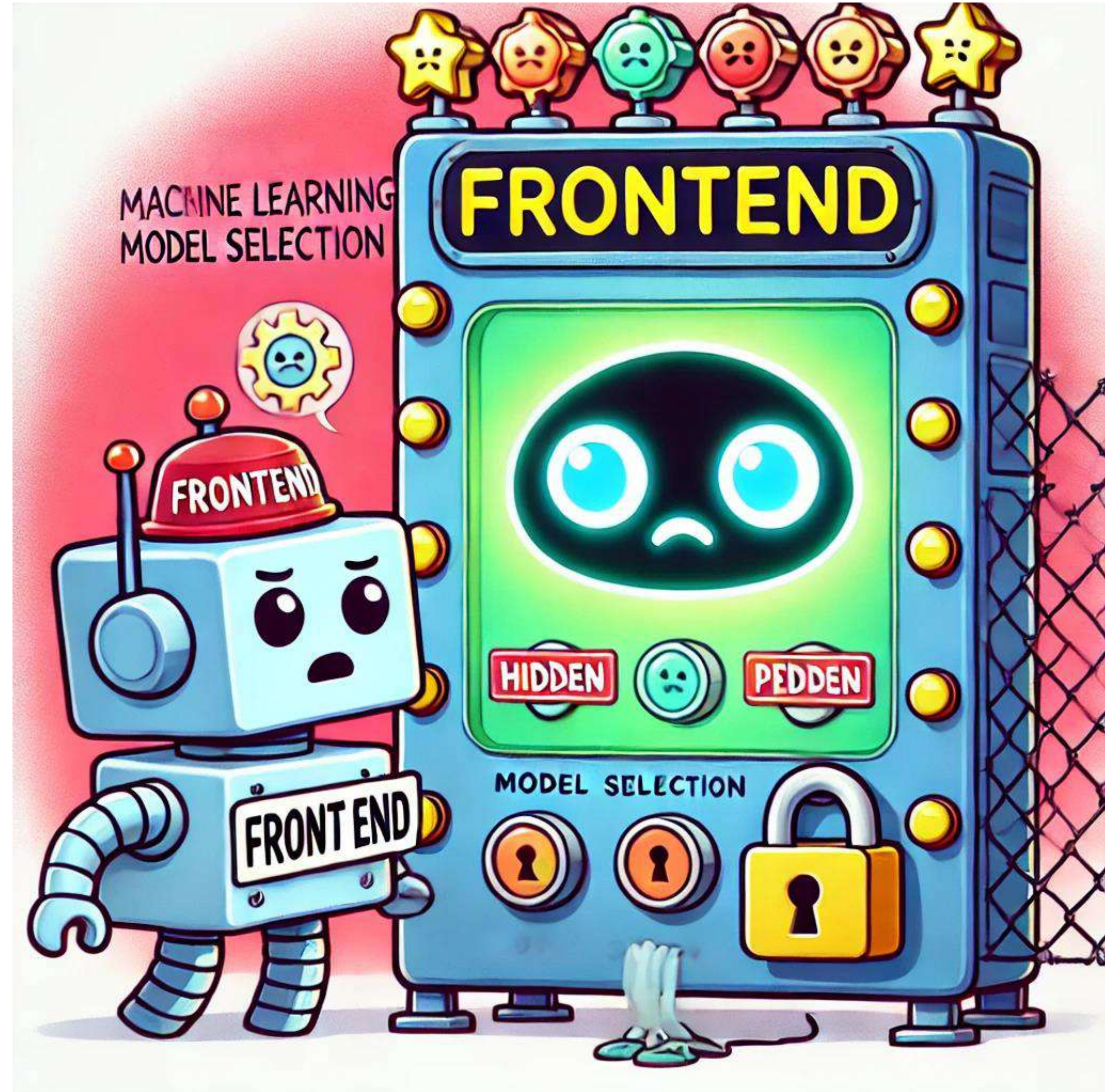
Results

- ✓ Deduplicated integration efforts



Results

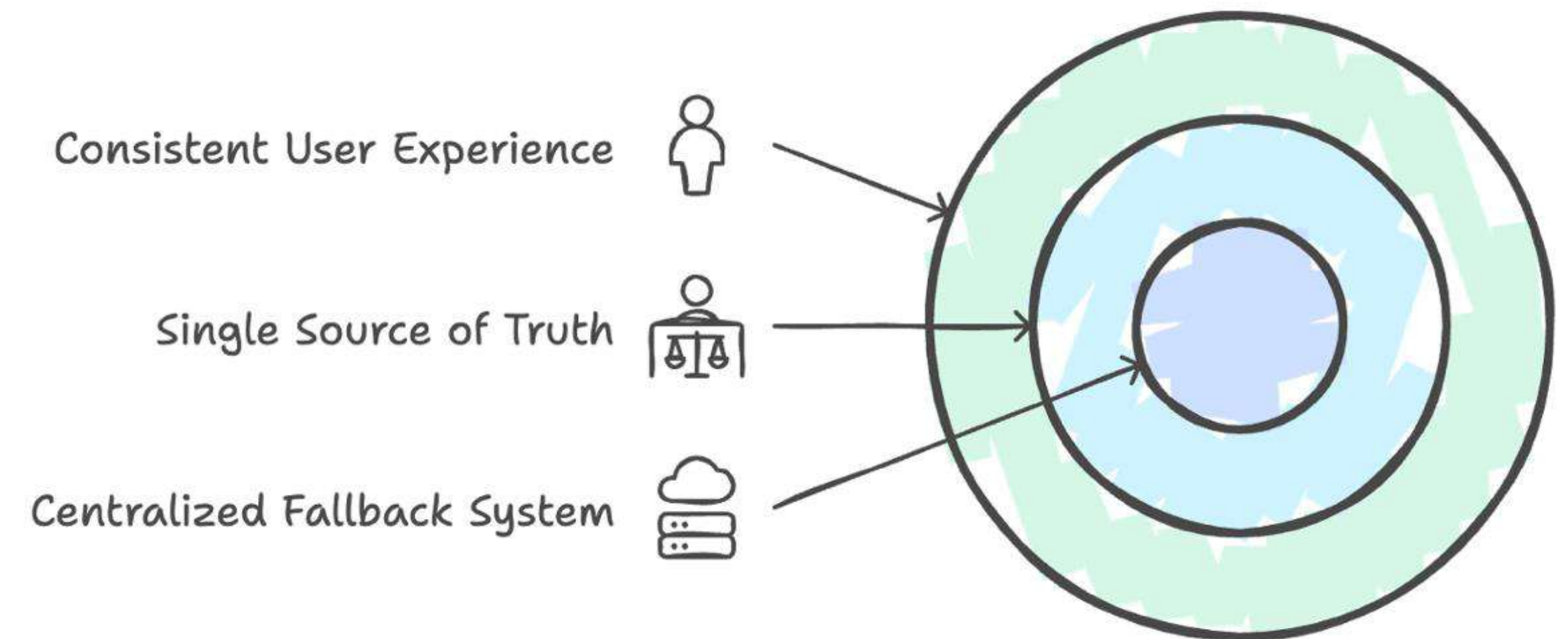
- ✓ Deduplicated integration efforts
- ✓ Abstracted model selection



OpenAI generated image

Results

- ✓ Deduplicated integration efforts
- ✓ Abstracted model selection
- ✓ **Centralised fallbacks**



Results

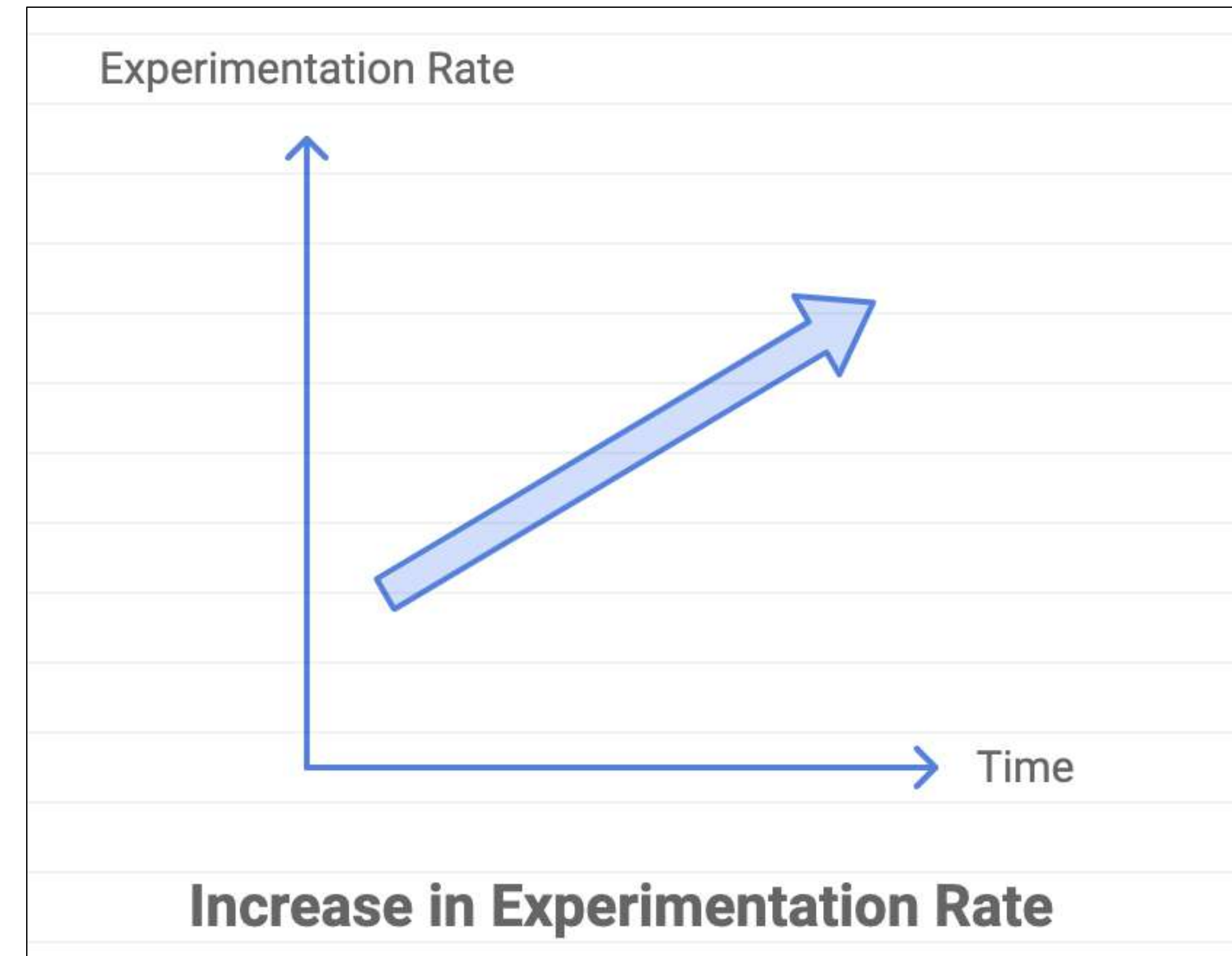
- ✓ Deduplicated integration efforts
- ✓ Abstracted model selection
- ✓ Centralised fallbacks
- ✓ Improved observability



OpenAI generated image

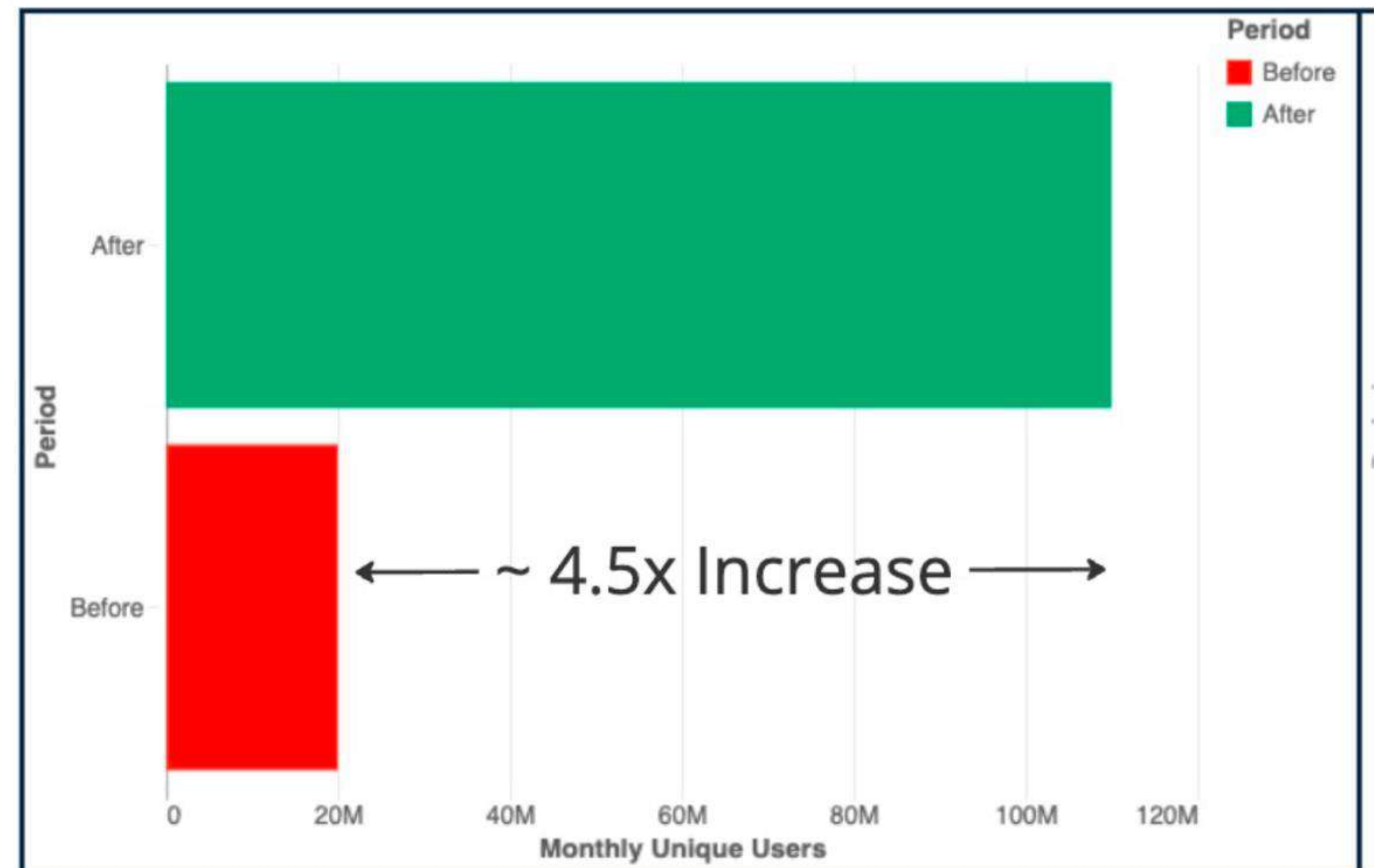
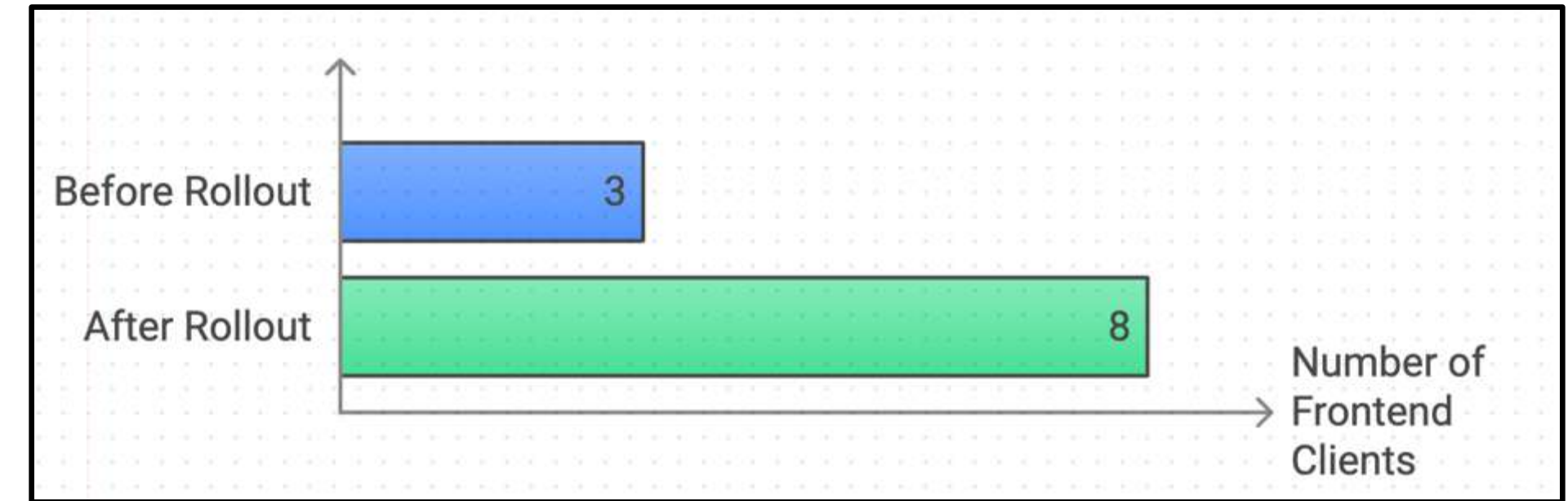
Results

- ✓ Deduplicated integration efforts
- ✓ Abstracted model selection
- ✓ Centralised fallbacks
- ✓ Improved observability
- ✓ **Accelerated experimentation**



Results

- ✓ Deduplicated integration efforts
- ✓ Abstracted model selection
- ✓ Centralised fallbacks
- ✓ Improved observability
- ✓ Accelerated experimentation
- ✓ Enhanced adoption of recommendations



Thank you