

# Natural Language Search

With the increasing amount of information available on the Internet one of the most challenging tasks is to provide search interfaces that are easy to use without having to learn a specific syntax. The development and availability of efficient and appropriate search functions are still a challenge in the field of database and information systems. Consider, for example, the context of tourism information systems where intuitive search functionality plays a crucial role for economic success. Querying an information system in natural language is especially appealing in the tourism domain because users usually have very different backgrounds regarding their computer literacy. Hardly any computer scientist or technically interested person has problems understanding the Boolean logic underlying conventional web search engines. Unfortunately, a growing majority of people using search engines has.

Hence, we have developed a query interface exploiting the intuitiveness of natural language. The system allows to transform open text to flight search query such as “cheap fares to spain from london on 2nd April”. The open text parser engine will convert this as a Oneway query to Madrid from London on 2015/04/02 for 1ADT.

## Features of OpenText Search.

### 1) Single Text box Search.

**Tell me about your trip!!**

cheap fares to ~~spain~~ from ~~london~~ on 2nd April

...

Search

You Searched :- cheap fares to spain from london on 2nd April

Param Name	Value
<b>From</b>	London , STN London , LGW London , LCY London , YXU London , LTN London , LHR London , LON
<b>To</b>	Madrid , MAD
<b>Depart Date</b>	2015/04/02
<b>Trip Type</b>	OneWay
<b>Trip Class</b>	Economy
<b>Passengers</b>	1 Adults 0 Children 0 Infant

The Engine has only one text box to enter various inputs. Traditional search widgets has minimum 7 input box. The engine provides huge simplicity in this area and lets user give choice to ask query in their own way.

## 2) Automatic nearest airport selection

If user ignores to provide his starting point. The system will try to find out nearest commercial airports from his current location. There are 9000+ airports or air field world wide but only 3900+ airports has scheduled passenger flights. The engine ensures that when it auto select airport it takes care while selecting airport. The system never selects airport which doesn't operate passenger flights. In the given screen-shot, the query has start point missing, It has correctly selected nearest airport which is Ahmedabad.

**Tell me about your trip!!**

cheap fares to Delhi on 13/01/2015

Search

You Searched :- cheap fares to Delhi on 13/01/2015

Param Name	Value
From	Ahmedabad , AMD
To	Delhi , DEL
Depart Date	2015/01/13
Trip Type	OneWay
Trip Class	Economy
Passengers	1 Adults 0 Children 0 Infant

## 3) Speed

The System parser is really very fast It takes around 150 ms to process inputs and convert that into HTML or JSON output. The system use various technology like Cache , BerkleyDB and Persistence to enhance performance.

## 4) Pluggable

The system is designed to sit outside the main system and function independently. The system takes search text as a inputs and provide parsed query in JSON format. The specific JSON query than can be feed into main system to search flights.

## 5) Spelling correction

The system looks for spelling correction. The City names are not normally part of dictionary so they never comes under the spelling correction. We have enhanced spelling correction to City names as well. This gives us benefit against any possible typo in city name which is were likely to happen. In below given search Mumae has wrong spelling but that is corrected by the parser.

**Tell me about your trip!!**

mumbae to Toronto

Search

You Searched :- mumbae to Toronto

Param Name	Value
From	Mumbai , BOM
To	Toronto , YTZ Toronto , YYZ Toronto , YTO
Depart Date	2014/11/22
Return Date	2014/11/25
Trip Type	RoundTrip
Trip Class	Economy
Passengers	1 Adults 0 Children 0 Infant

## 6) Enhanceable

We have tried to cover very wide range of possibilities while designing and developing this service. The system can add possible enhancements by adding support for it.

**Several Samples that are easily parsed by the system and converted into Air Search query.**

- 1) goa to bangalore in december
- 2) i'd like to visit Scranton, PA in June for three days
- 3) looking for a weekend in florida in summer
- 4) Cheap Rome fares
- 5) i would like to spend two weeks in miami this winter
- 6) want to take two week holiday in pattaya this winter

- 7) Tuna fishing off Jamaica in July
- 8) tickets to jamaica for party of six
- 9) I want to visit New York in the third week of July
- 10) flights vancouver tokyo sept 1 to 14
- 11) what are the fares for greece in summer
- 12) one way ticket to moscow july 7
- 13) Visit Mumbai in January 2014
- 14) spring break miami trip for two
- 15) Looking for flights to Frankfurt in summer
- 16) ny - las vegas next weekend
- 17) looking for one way ticket to london
- 18) can i get the cheapest fares for los angeles starting sept 9 and returning sept 18
- 19) family trip to San Diego zoo next month
- 20) Ahmadabad to Australia for 10 to 15 days
- 21) cheap flights toronto london july 18 to aug 3
- 22) what does it cost for rome to barcelona
- 23) Want best rates to Montreal in the fall
- 24) yow yhz september return
- 25) Want cheap fares to Las Vegas in February
- 26) a week in jamaica in august
- 27) mnp to nyc feb 18 - 21
- 28) Best fares to Lisbon and Algarve for June
- 29) good fares to spain from london in 2nd half April
- 30) toronto to sydney at christmas for two weeks

- 31) Flights to California in June second week
- 32) what are the rates for travel to italy in the summer
- 33) best price new york to prague july 18 to 30
- 34) best prices for week holiday to ny spring break
- 35) refundable fare vancouver london april 1 to 10
- 36) Ahmadabad to Melbourne next Thursday for 4 days
- 37) Family trip to Los Angeles and Disneyland in August
- 38) i want to go to athens from madrid april 18
- 39) Antigua for two weeks in November
- 40) I want to visit new york for a weekend in winter
- 41) three day visit lancaster pa march weekend of 15th
- 42) Ahmadabad to Singapore next Tuesday
- 43) mumbai two weeks jan 18 to feb 2
- 44) three day visit lancaster pa march weekend of 15th
- 45) two tickets vancouver to madrid september 15 returning the 30th
- 46) lowest fares edmonton to paris around summer
- 47) i am looking for inexpensive flights from toronto to ny
- 48) three day visit lancaster pa weekend of march 15th
- 49) I want a cheap Halifax fare middle of July
- 50) I want to take the kids skiing to Quebec City in January