

# trec\_eval

- **trec\_eval is a standard evaluation tool for ad-hoc retrieval**

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- **trec\_eval reports four types of information**

- Basic information about the results file

- Summary statistics that apply to a complete ranking

- Statistics that indicate quality at different positions in the ranking

- » Normalized by the number of relevant documents for each query

- Precision at different positions in the document ranking

- **Statistics on a by-query or by-query-set basis**

```
num_q all 50
num_ret all 5000
num_rel all 5061
num_rel_ret all 1082
map all 0.1825
gm_ap all 0.0707
R-prec all 0.2632
bpref all 0.2525
recip_rank all 0.6859
irel_pn.0.00 all 0.7327
irel_pn.0.10 all 0.4793
irel_pn.0.20 all 0.3472
irel_pn.0.30 all 0.2579
irel_pn.0.40 all 0.1939
irel_pn.0.50 all 0.1176
irel_pn.0.60 all 0.0744
irel_pn.0.70 all 0.0606
irel_pn.0.80 all 0.0348
irel_pn.0.90 all 0.0287
irel_pn.1.00 all 0.0101
P5 all 0.5160
P10 all 0.4820
P15 all 0.4480
P20 all 0.4050
P30 all 0.3620
P100 all 0.2164
P200 all 0.1082
P500 all 0.0433
P1000 all 0.0216
```

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- **Basic information about the result file**
  - Primarily for documentation and error checking

- **Example:**

num_q all 50	<b>There were 50 queries</b>
num_ret all 5000	<b>5,000 documents were retrieved</b>
num_rel all 5061	<b>There are 5,061 relevant documents</b>
num_rel_ret all 1082	<b>1,082 retrieved documents were relevant</b>

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- **Summary statistics that apply to the entire ranking**
  - I.e., results are averaged from different parts of the ranking

- **Example**

map all 0.1825	<b>Mean average precision (MAP)</b>
gm_ap all 0.0707	<b>Average precision using geometric mean</b>
R-prec all 0.2632	<b>R-Precision</b>
bpref all 0.2525	<b>bpref</b>
recip_rank all 0.6859	<b>Reciprocal rank</b>

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- **Interpolated Recall-Precision at 11 recall points**
- **Example**

ircl\_prn.0.00 all 0.7327

ircl\_prn.0.10 all 0.4793

ircl\_prn.0.20 all 0.3472

ircl\_prn.0.30 all 0.2579

ircl\_prn.0.40 all 0.1939

ircl\_prn.0.50 all 0.1176

ircl\_prn.0.60 all 0.0744

ircl\_prn.0.70 all 0.0606

ircl\_prn.0.80 all 0.0348

ircl\_prn.0.90 all 0.0287

ircl\_prn.1.00 all 0.0101

**Precision at 0% Recall**

**Precision at 10% Recall**

**Precision at 20% Recall**

**Precision at 30% Recall**

**Precision at 40% Recall**

**Precision at 50% Recall**

**Precision at 60% Recall**

**Precision at 70% Recall**

**Precision at 80% Recall**

**Precision at 90% Recall**

**Precision at 100% Recall**

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- **Precision at rank N**

- **Example**

P5 all 0.5160

P10 all 0.4820

P15 all 0.4480

P20 all 0.4050

P30 all 0.3620

P100 all 0.2164

P200 all 0.1082

P500 all 0.0433

P1000 all 0.0216

**Precision at rank 5**

**Precision at rank 10**

**Precision at rank 15**

**Precision at rank 20**

**Precision at rank 30**

**Precision at rank 100**

**Precision at rank 200**

**Precision at rank 500**

**Precision at rank 1000**