

# TREC Deep Learning Track

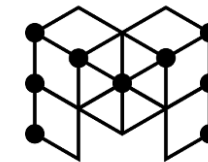
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# Deep Learning Track

- Deep models learn an intricate representation of a large-scale dataset
- Here: Adhoc ranking dataset with full Q+D text and Q-D judgments
  - Task 1: Given Q and top1k D, rerank D for relevance
  - Task 2: Given Q and corpus of D, retrieve/rank D for relevance
- What's new: Large set of judged training queries Q and Q-D
- Research questions:
  - Does the large training set help? Beat strong baselines?
  - Do tasks 1 and 2 require different technology?
  - Will we find elegant/fast/effective solutions to task 2 (end-to-end retrieval)?
  - Task 1 also has a non-TREC leaderboard, will results agree with TREC (judged) eval?
  - Do metrics on sparsely judged many queries approximate deeply judged few queries? Which is better?

# Dataset: MS-MARCO

<http://www.msmarco.org/>



**MS MARCO**

Microsoft MACHine Reading COmprehension Dataset

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1,010,916 Real Bing  
User Queries

182,669 Natural  
Language Answers

No Answer  
Subset

10 Passages  
Per Query

3,213,835 Full  
Web  
Documents

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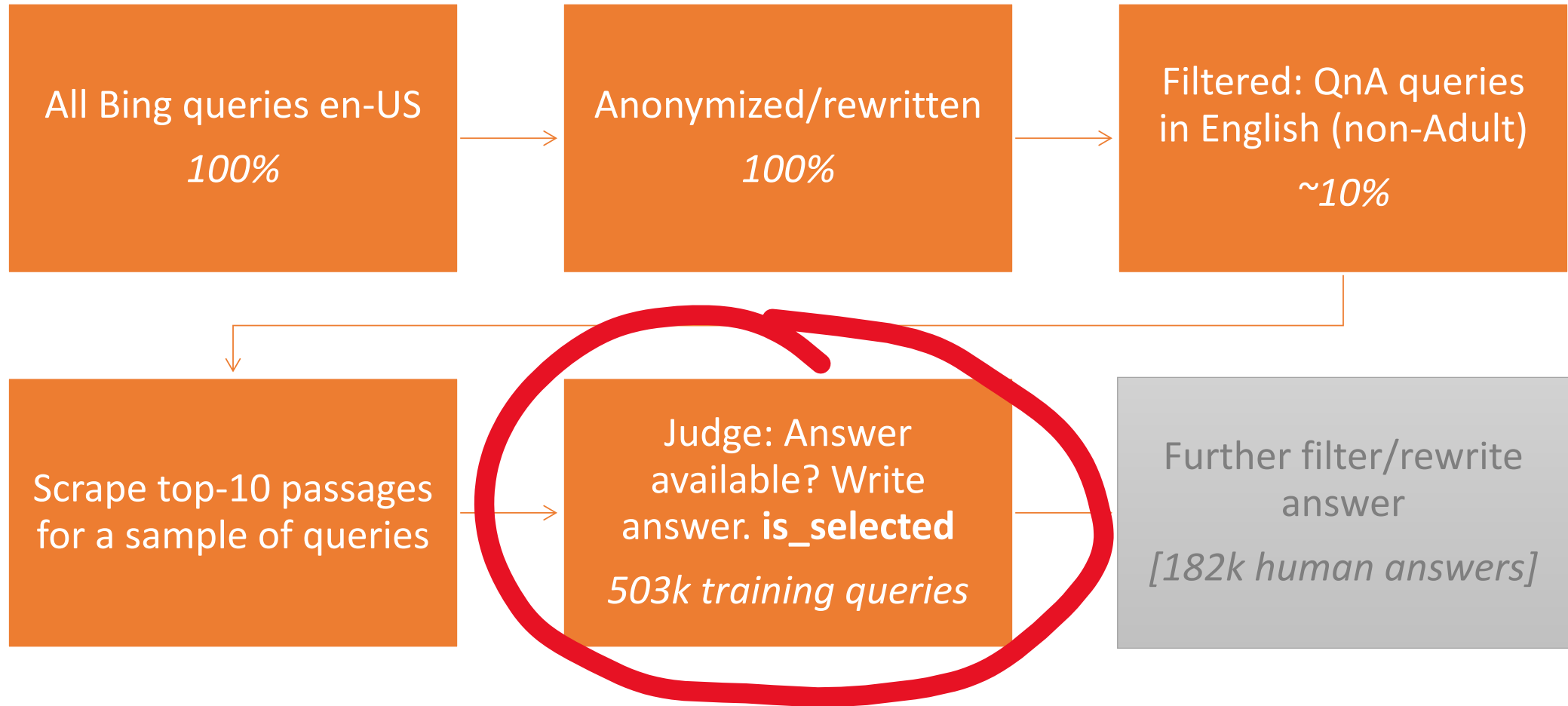
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Ranking dataset	Count	File size
Corpus	8,841,823 passages	2.9G
Training queries	808,731 queries	33.5M
Training qrels	532,761 judgments on 502,939 of training q	10M

## MS-MARCO Dataset Timeline

December 2016	MS-MARCO <b>QnA dataset</b> release
April 2018	Reaches 1 million queries
July 2018	Define <b>ranking dataset</b> . Internal challenge in MS. Top three systems: Deep, LTR, handcrafted
October 2018	Ranking dataset released at <a href="http://www.msmarco.org">http://www.msmarco.org</a>
November 2018	Establish leaderboard for (re)ranking challenge
Next	Run TREC 2019 ranking challenge, with NIST evaluation
Next	Keyword Extraction Dataset/Competition



# Creating the MS-MARCO data

# MS-MARCO

- Starting Sept 2016
- Queries Overall streaming
  - Privacy and Legal filter and/or anonymization and/or rewriting
- Filter
  - Isadult
  - Foreign
  - Classifier ml (based on judges MS-MARCO if the query was answerable)
  - Other classifiers Xia/Tang
- Scrape Bing for top-10 passages
- Judge
  - Answer available? No.
  - Answer available can't summarize
  - Answer available can summarize
  - Can't judge / junk
  - Write answer
  - Select passage (is\_selected)
  - "16"
  - 1,030,000
- If too much like copy+paste, rewrite for smart speaker
  - "there are 16 teaspoons in a cup"
  - 182,000 answers
- V2.0 two datasets
  - 900k Answer(aka QA)
  - 130k Wellformed answer (Aka NLGEN)
- V2.1 merged (April 23)
  - Wellformed split evenly and not always available
  - 800k Train
  - 100k dev
  - 100k eval
- Passage Reranking Task(October 26<sup>th</sup>)
  - 8.8 m passages
  - Given Top 1000 from BM25, rerank by relevance.
  - 651,221 relevance labels
- KeyWord Extraction Dataset(ETA March 2019)

# MS-MARCO ranking dataset

- Pool the passages 8.8 million
- 1 million Queries
  - 550k having an answer and is\_selected
  - 1.4 million positive in total
  - BM25 top1000
- Training file with triples
  - train.triples (272gb(full) and 27gb(small) QID, Positive PID, Negative PID.
- Top1000 files
  - Top1000 passages from BM25
  - Test set top-1000 return top-10 6.8k queries
- 3.2 million docs clean body
  - Based on the 3.5 million urls the passages come from.
  - Use as metadata, train embeddings, etc.

# Results So Far

- MSFT Hackathon
  - 21 teams
  - Top3 got close scores
    - Deep (.27)
    - Handcrafted(.24)
    - Traditional ML(.22)
- External ->
  - 7 results

## Passage Re-Ranking

Rank	Model	Submission Date	MRR@10 On Eval
1	<b>SAN + BERT base</b> Yu Wang, Xiaodong Liu, Jianfeng Gao - Deep Learning Group, Microsoft Research AI [ <a href="#">Xiaodong, et al. '18</a> ]	January 22th, 2019	35.93
2	<b>BERT + Small Training</b> Rodrigo Nogueira and Kyunghyun Cho - New York University [ <a href="#">Nogueira, et al. '19</a> ] and [ <a href="#">Code</a> ]	January 7th, 2019	35.87
3	<b>IRNet (Deep CNN/IR Hybrid Network)</b> Dave DeBarr, Navendu Jain, Robert Sim, Justin Wang, Nirupama Chandrasekaran – Microsoft	January 2nd, 2019	28.06
4	<b>Neural Kernel Match IR (Conv-KNRM)</b> (1)Yifan Qiao, (2)Chenyan Xiong, (3)Zhenghao Liu, (4)Zhiyuan Liu-Tsinghua University(1, 3, 4); Microsoft Research AI(2) [ <a href="#">Dai et al. '18</a> ]	Novmeber 28th, 2018	27.12
5	<b>Neural Kernel Match IR (KNRM)</b> ((1)Yifan Qiao, (2)Chenyan Xiong, (3)Zhenghao Liu, (4)Zhiyuan Liu-Tsinghua University(1, 3, 4); Microsoft Research AI(2) [ <a href="#">Xiong et al. '17</a> ]	December 10th, 2018	19.82
6	<b>Feature-based LeToR: simple-feature based RankSVM</b> (1)Yifan Qiao, (2)Chenyan Xiong, (3)Zhenghao Liu, (4)Zhiyuan Liu-Tsinghua University(1, 3, 4); Microsoft Research AI(2)	December 10th, 2018	19.05
7	<b>BM25</b>	Novmeber 1st, 2018	16.49

```
grep -w queries.train.tsv fall | egrep -w rome\|roman
```

```
115577 date of the fall of rome  
214518 how did rome fall apart  
394523 in what year did the fall of ancient rome occur  
584175 what caused the fall of roman empire  
920193 what was the fall of the roman empire  
924037 what were the factors that led to the fall of the roman empire  
941441 when did the eastern roman empire fall  
1009300 which event usually marks fall of western roman empire  
1063096 why did roman empire fall  
1140059 which diseases affected the fall of the roman empire
```

Bing Head (over a long period)

```
fall of rome  
fall of the roman empire  
the fall of rome  
the fall of the roman empire  
fall of roman empire  
when did the roman empire fall  
why did the roman empire fall  
rise and fall of the roman empire  
when did rome fall
```

Bing Tail (count=2 over a long period)

```
why did the roman empire in the east survive the fall of rome  
www.ushistory.org/civ/6f.asp.  
1952 the decline and fall of the roman empire book  
what lead to the fall of rome  
roman fall  
fall airline fares 2018 rome  
books about the fall of the roman empire  
what led rome to fall quizlet diocletian reforms  
the roman republic to the fall of the roman empire timeline  
what were the effects of the fall of rome  
gibbons rise and fall of the roman empire
```

Bing Random (over a long period)

```
ancient rome: the rise and fall of an empire  
fall of the roman empire  
fall of the roman republic  
how did the western roman empire fall  
the decline and fall of the roman empire pdf  
the fall of rome  
the fall of the roman empire  
the fall of the roman empire film  
what were the effects of the fall of rome  
which of the following correctly describes prince odoacer's role in the fall of the western roman empire? prince odoacer  
forced augustulus to hand over his crown, and germanic kingdoms claimed the land. prince odoacer is credited with  
overtaking western rome and creating a thriving economy and culture. prince odoacer served under emperor augustulus during  
the collapse of the western roman empire. prince odoacer was e
```



115577 date of the fall of rome

1931780 That being said, the Fall of Rome is normally either dated to the Sack of Rome by Alaric the Goth on August 24th A.D. 410, or the resignation of the last Roman Emperor of the Western Empire, Romulus Augustus, on September 4th, A.D. 476.

214518 how did rome fall apart

2556249 For the film, see The Fall of the Roman Empire (film). The Fall of the Western Roman Empire (also called Fall of the Roman Empire or Fall of Rome) was the process of decline in the Western Roman Empire in which it failed to enforce its rule, and its vast territory was divided into several successor polities.

394523 in what year did the fall of ancient rome occur

1931779 History >> Ancient Rome. Rome ruled much of Europe around the Mediterranean for over 1000 years. However, the inner workings of the Roman Empire began to decline starting around 200 AD. By 400 AD Rome was struggling under the weight of its giant empire. The city of Rome finally fell in 476 AD. Rome reached its peak of power in the 2nd century around the year 117 AD under the rule of the great Roman emperor Trajan.

920193 what was the fall of the roman empire

3424901 Causes for the Fall of the Roman Empire-Antagonism between the Senate and the Emperor One of the main causes for the Fall of the Roman Empire was the Antagonism between the Senate and the Emperor. Causes for the Fall of the Roman Empire-Slave Labor One of the main causes for the Fall of the Roman Empire was the Slave Labor. The number of slaves increased dramatically during the first 2 centuries of the Roman Empire.

941441 when did the eastern roman empire fall

3137531 Its capital city was Constantinople (or New Rome). It represented an administrative division of the Roman Empire, but after the fall of the western part it survived until the fall of Constantinople in 1453. The Eastern Empire was also called the Byzantine Empire. The term Byzantine Empire dates from the 17th century.

1009300 which event usually marks fall of western roman empire

4145016 The event that most commonly marks the end of the Western Roman Empire is the overthrow of the Roman Emperor Romulus Augustulus by the German Foederati.

1063096 why did roman empire fall

2563452 The Western Empire was ruled by Rome, the Eastern Empire was ruled by Constantinople. The fall of Rome discussed here is referring to the Western Roman Empire which was ruled by Rome. The Eastern Roman Empire became known as the Byzantium Empire and remained in power for another 1000 years. The City of Rome is Sacked. The city of Rome was thought by many to be unconquerable. However, in 410 AD, a Germanic barbarian tribe called the Visigoths invaded the city. The Eastern Roman Empire, or Byzantium, fell in 1453 to the Ottoman Empire. 2 Many poor people were glad to see Rome fall. 3 They were starving to death while being taxed heavily by Rome. 4 Near the end of the Roman Empire, the city of Rome was no longer the capital.

No Judgment:

584175 what caused the fall of roman empire

924037 what were the factors that led to the fall of the roman empire

1140059 which diseases affected the fall of the roman empire

how many does it cost to stay at trump hotel  
age of donald trump  
biggest lies donald trump has told  
cabinet has how many people in it trump  
can trump change immigration laws  
can trump resign the presidency  
can trump win the nomination  
cortana how much is donald trump worth  
cost of secret service at trump tower n  
cost of trump vacations  
could president trump be impeached  
critic trump he are  
chop up trump and the shadow  
definition of the word trump  
did donald trump think he was going to win  
did john mccain get more votes than trump?  
did president trump sign the budget  
did the president trump use a teleprompter  
did trump appear in home alone  
did trump do a hillary and trump spend  
did trump call clinton a criminal  
did trump call media enemy of the people  
did trump donate his presidential salary to the park service?  
did trump ever say he was first in his class  
did trump get a new press secretary again  
did trump lift russian sanctions  
did trump really go to college?  
did trump reduce debt  
did trump say he could be so presidential  
did trump steer a million into his own pocket  
did trump have a million in his bank?  
did trump win florida state  
did vegas shun trump tower  
did wall street donate to trump campaign  
do veterans support trump for president  
do you think donald trump will be impeached  
donald trump donate his salary  
does donald trump support transgenders  
does donald trump voter fraud exist  
does ivanka trump daughter have down syndrome  
does joe scarborough support trump  
does melania trump have a boyfriend  
does mitch mcconnell like trump  
does stan smith support donald trump  
does trump cheat at golf  
does trump have a chance at president  
does trump know about obama trying to oust him  
does trump own all the trump buildings  
donald trump business success rate  
donald trump daughter  
donald trump height  
donald trump's platform for president  
female trump supporters  
forbes estimates trump's wealth  
hannity justifies trump  
has donald trump been caught in a lie  
has donald trump gained weight  
has ivanka trump ever had cosmetic surgery  
has melania trump filed for divorce  
has president trump really deporting illegals  
has the stock market gone up since trump has been president  
has trump cheated on his wife  
has trump committed any impeachable offense  
has trump donated his salary  
has trump ever taken an iq test  
have trump ever had surgery  
highest population states who voted for trump  
how can trump be held solve crimes  
how did trump win the election  
how is donald trump regarded in uk?  
how is trump doing in polls  
how is trump doing in the ratings  
how long did it take melania trump to become a citizen?  
how long has donald trump been in office  
how long has donald trump been married to melania  
how long have trump and melania been married  
how many bankruptcy trump  
how many books did donald trump write  
how many brothers do trump have  
how many californians voted for trump  
how many children does donald trump jr have  
how many children does trump have  
how many children donald trump has?  
how many counties won by clinton and trump  
how many days has trump taken off  
how many educated men voted for trump?  
how many ex wives does trump have  
how many executive orders has president trump signed  
how many floors in trump tower  
how many followers does trump have on twitter?  
how many illegal immigrants have been deported under trump?  
how many jobs has trump created since becoming president  
how many jobs has donald trump created since election  
how many jobs were created under obama vs. trump  
how many kids does trump have  
how many languages does the president melania trump  
how many languages melania trump speaks  
how many lawsuits are there currently against trump  
how many of trump's staffers have left since he took office  
how many old is donald trump  
how many pending lawsuits against donald trump  
how many people has donald trump insulted  
how many people has trump fired in his administration?  
how many positions still await a nomination by trump  
how many rounds of golf did trump play  
how many states did trump win  
how many stories tweeted today  
how many times has trump gone bankrupt?  
how many times has trump played golf since being elected compared to obama  
how many times was trump go bankrupt  
how many twitter followers does donald trump  
how many wives has donald trump had  
how much did hillary and trump spend  
how much did trump say the wall will cost  
how much did trump's new air force one cost?  
how much does it cost for security for trump  
how much does melania trump weigh  
how much has illegal immigrant decreased since trump took office  
how much has president trump decreased the debt  
how much has trump costs the taxpayers so far  
how much has trump spent on vacations so far  
how much is ivanka trump worth  
how much is the donald trump net worth  
how much is trump's presidency costing tax payers  
how much money did ivana trump get in divorce  
how much money did trump donate to clinton  
how much money does donald trump make  
how much money does it cost to build the trump wall  
how much money does trump has left over from his campaign  
how much nra contributed to trump campaign  
how much wealth does donald trump have  
how often has trump played golf since becoming president  
how old is d trump  
how old is donald trump president  
how old is donald trump?  
how old is president trump's  
how old is trump jr  
how old is trump's youngest son  
how popular is donald trump  
how popular is trump today  
how tall is donald trump  
how tall is donald trump  
how tall is donald trump and weight  
how tall is ivana trump  
how tall is ivanka trump?  
how tall is trump tower?  
how tall is president trump  
how to contact ivanka trump  
how to email president trump directly  
how to show support for donald trump  
how old is donald trump  
is barack obama shadowing donald trump?  
is donald trump trump's kid or is someone else his biological father  
is barron trump autistic or shy  
is charles krauthammer pro trump or against trump  
is del lago casino and resort trump owned  
is donald trump collecting his salary  
is donald trump doing a good job as president  
is donald trump doing a good job?  
is donald trump going to be impeached  
is donald trump losing his hair  
is donald trump out of the presidential race  
is donald trump really a republican?  
is donald trump republican or democratic  
is donald trump taking a salary  
is donald trump the oldest president elect  
is donald trump the richest man in the world  
is donald trump's hair blonde or white  
is ivana trump married  
is joe flacco elite trump  
is a trump supporter  
is melania joining president trump on his vacation  
is melania trump going to divorce trump  
is mrs trump pregnant  
is nicole kidman a trump supporter  
is president trump being impeached  
is president trump doing a good job  
is president trump's cabinet complete  
is the first lady on vacation with trump  
is trump a billionaire or millionaire  
is trump a republican  
is trump already the worst president  
is trump declaring war  
is trump doing the best  
is trump going to get impeached  
is trump gonna get impeached  
is trump leaving the white house  
is trump likely to be impeached  
is trump mentally competent  
is trump incompetent  
is trump planning to eliminate home interest deduction  
is trump taking a salary  
is trump the disclosure president of ufos  
is trump's travel ban legal  
is trump's wife a us citizen?  
meaning of donald trump name  
melania trump's age  
melina trump what she uses for wrinkles  
most current trump polls  
number of judges trump confirmed  
number of times trump has played golf while in office  
number of votes for trump  
old how old is donald trump son.  
percentage of americans who disapprove of trump  
percentage of college educated whites voted for trump  
percentage of college educated women who voted for trump  
percentage of white women voted for trump  
phone number for donald trump  
proposed cost of trump wall  
should trump's border wall  
states where trump is ahead  
the cost of building trump's wall  
the trump wall cost  
total number of votes for trump on election day  
trump carries his spanish notes  
trump cost vs obama cost  
trump family members net worth  
trump food stamp program cut in this budget?  
trump hotel las vegas is there a resort fee  
trump iq number  
trump killed by who  
trump killed top  
trump puts tariffs on solar  
trump safari kills  
trump tight definition  
trump tweet doesn't age well  
trump's parole plan cost  
trump what college did he attend?  
trump's parade plan cost  
trump's polls  
trump's rounds of golf  
unemployment numbers under trump  
us secret team mexico trump  
was trump married to marla maples  
watch trump in wisconsin  
what are the executive orders that trump has signed  
what are the latest polls on donald trump  
what are the odds of trump being impeached  
what are the place of trump  
what are trump's chances of being impeached  
what ban is trump trying to do with hawaii travel  
what bills has donald trump signed into law  
what brand of tie does donald trump wear  
what buildings has trump built  
what college did donald trump go to  
what college did president trump graduate from?  
what college did trump attend  
what college did trump graduate from  
what date did trump get married  
what date was trump sworn in  
what date was trump the republican nominee  
what degree did trump get from wharton  
what designer dresses melania trump  
what did donald trump tweet  
what did trump do to griffin  
what did trump say about global warming  
what did trump say about hillary's 2008 bid?  
what did trump say about him being smart  
what did trump say about rosie o'donne  
what do the bookies bet on trump finishing his term  
what do the psychics say about donald trump?  
what does angus king think of donald trump?  
what does donald trump think of donald  
what does ivana trump think of donald  
what does president trump say about climate warming  
what does the c in fred trump's name stand for  
what does trump's tax plan mean  
what donald trump said about women  
what education does trump have  
what evangelicals have endorsed trump  
what gave trump trump own  
what happened to donald trump in dayton ohio  
what has melania trump done thus far  
what has pres trump said about alex jones  
what has president trump accomplished in his first year in office  
what has president trump done so far  
what has president trump tweeted today  
what importance is ivanka trump  
what is barron trump like?  
what is donald trump and melania's real relationship?  
what is donald trump annual income  
what is donald trump net worth  
what is donald trump rank on the world's richest  
what is donald trump worth now  
what is donald trump's birthplace  
what is donald trump's cholesterol  
what is donald trump's full birth name  
what is donald trump's net worth  
what is donald trump's mental illness  
what is donald trump's youngest son's name  
what is going to be the length of the wall donald trump  
what is iq of donald trump  
what is ivana trump  
what is ivanka trump's official role in the white house  
what is maloya a trump trump's religion?  
what is melania trump d  
what is melania trump tweeted ri  
what is melania trump nationality  
what is melania trump's age  
what is melania trump's nationality  
what is mrs. trump first name?  
what is one issue trump talked about in the election  
what is president trump tweeted today  
what is president trump's current approval rating?  
what is president trump's net worth?  
what is president trump's salary  
what is president trump's salary as president  
what is presidents trump's age  
what is putin says about trump  
what is the cost of trump's border wall  
what is the estimated cost of trump's wall  
what is the first name of mrs trump  
what is the iq of trump  
what is the likelihood trump gets impeached  
what is the name of marla trump daughter  
what is the nationality is trump  
what is the nationality of donald trump  
what is the net worth of donald trump  
what is the trump card  
what is trump d  
what is trump offering for president  
what is trump planning to do with nafta  
what is trump's big announcement  
what is trump saying about virginia shooting  
what is trump's agenda in relation to military?  
what is trump's college degree in?  
what is trump's net worth  
what is trump's parole plan  
what is trump's tax reform  
what jobs has trump created  
what kind of car does donald trump wear own  
what kind of watch does trump wear  
what nationality is trump  
what number is donald trump for richest men in the world  
what obama regulations has trump reversed  
what pageant does donald trump own  
what pageants have donald trump owned  
what painting did trump want from the museum?  
what party is donald trump running for president  
what percent of trump voters  
what pen does trump use  
what percent of popular votes did trump get  
what percent of black vote did trump get  
what percent of evangelicals voted for trump?  
what president is trump  
what rank is donald trump in wealth  
what regulations has trump repealed  
what regulations have been rolled back by trump  
what role does omarosa have trump  
what rules must the senate do to impeach trump  
what rush limbaugh says about trump speech  
what degree did trump go to  
what six languages can melania trump speak  
what size is ivanka trump chest  
what size shoe does trump wear  
what size shoe trump  
what size shoes does trump wear  
what sort of plastic surgery has melania trump had  
what sports does president trump play  
what state had the biggest majority vote for trump  
what state was trump born in  
what stocks do donald trump invest in  
what the trump immigration ban.  
what the wj parted trump in interview  
what time did trump date speech  
what trump communications director resigned  
what trump said about obama playing golf during campaign  
what trump said about veterans  
what trump supporters wear  
what trump's net worth  
what type helicopter does donald president trump have?  
what type is trump's private jet  
what type visa did melania trump get  
what was lara trump's maiden name  
what was president trump's wife trump took office  
what was the percentage of young white voter for trump  
what was the second bill that trump signed into law?  
what was trump like as a child  
what was trump's second bill that he signed into law?  
what when is donald trump's birthday  
what year did donald trump marry melania  
what year did donald trump marry melanie  
what year did trump get divorced  
what year did trump marry melania  
what year was donald trump married  
what year was donald trump president  
what's donald trump's son's name  
what's president trump approval rating?  
what's the feud between trump and rosie  
what's the latest trump scandal  
when and where was donald trump born  
when did donald trump become inaugurated  
when did marla maples and donald trump get divorced?  
when did melania marry trump  
when did trump began his campaign  
when did trump declare his candidacy  
when did trump marry melania?  
when did trump nearly go bankrupt  
when did trump purchase mar-a-lago  
when is the birthday of millenia trump?  
when is the next date for trump binding spell  
when is trump coming home  
when was barron trump born  
when was melania trump married  
when was donald trump born?  
when was melania & donald trump married?  
when was the last time melania trump was seen  
when was trump elected president  
when was trump taj mahal built  
when will donald trump i'll take over as president of the united states  
when will the impeachment paperwork start for trump  
when will trump arrive at davos  
when will trump create a vaccine safety commission  
where and when did melania trump become a usa citizen?  
where and when was donald trump born  
where are trump ties made  
where did trump learn to play golf  
where is donald trump from?  
where is donald trump's house  
where is melania trump tonight  
where is the trump tower  
where is mrs trump born  
where is the trump grand hyatt located  
where is the truth about trump's popularity  
where is trump's childhood home?  
where was ivanka trump born  
where was trump born  
where was trump born  
which # president is trump?  
which college did president trump graduate from  
which leader did trump not shake hands with  
which one is the real donald trump twitter account  
which party does trump belong to  
which state had the largest margin of victory for trump/clinton  
who are the trump children  
who bailed out trump  
who becomes president if trump impeached  
who blocked trump's travel ban  
who is donald trump's wife  
who financed trump's project  
who has been staying in the lincoln bedroom while trump has been in office  
who has left trump's white house  
who hired trump to star in the apprentice?  
who is donald trump's parents  
who is donald trump's assistant in the white house  
who is donald trump's kids  
who is donald trump's son?  
who is ivana trump  
who is ivanka trump's mom  
who is kevin o'connor's staff  
who is ara trump married  
who is maryanne trump barry  
who is melania trump the  
who is president trump's press secretary  
who is secretary of defense under trump  
who is the head press secretary for trump  
who is the head press secretary for trump  
who is the press secretary for trump  
who is the trump administration susan rice  
who is the wife of trump  
who is trump cabinet members  
who is trump running mate  
who is trump's communications director  
who is trump's council  
who is trump's press secretary  
who is trump's wife  
who met with trump in davos  
who owns trump las vegas  
who owns trump plaza  
who owns trump tower new york  
who ran against trump in the republican party?  
who resigned from trump  
who supports trump immigration plan  
who was donald trump's grandfather  
who was the comedian who was trump  
who was the comedian recapitating mimic of trump  
who's ahead hillary or trump  
whos sitting behind trump  
why did trump leave the paris agreement  
why didn't trump shake merkel's hand  
why does trump want a ban on trans individuals from the tary?  
why secret service trump tower  
why trump is bad for the economy  
will collusion get mr trump impeached  
will donald trump be impeached  
will trump have to testify  
words to describe donald trump  
would agree to trump investigation if hillary was prosecuted

# Evaluation

- 6800 test queries (held out)
  - Reranking task, you are given top1k to rerank
  - Submit top 1000 ranking for each query
- Evaluation 1: Use MS-MARCO's is\_selected label
  - Metric: Mean reciprocal rank of is\_selected passage
- Evaluation 2: Use TREC pooled evaluation on ~50 queries
  - 3-level judging: 0) Not an answer, 1) Has an answer, 2) Nice readable answer
  - Metrics: AP, NDCG, RBP, ...
- Evaluation question: Do they agree? Which is better?

# Possible directions for future years

Find more uses of the 1 million MS-MARCO queries

Document ranking rather than passage ranking

More ways of getting training labels

Tasks beyond adhoc ranking

New Queries/New Community Proposed Questions.