

TriviaNLQ: Natural Language Query for trivial questions

M2 TAL Software Project

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Demo

```
-- This is our demo!  
-- Pose your question:  
Where is Sikorski Memorial?  
select ?a where{dbr:Sikorski_Memorial dbo:location ?a }  
-- Here's the result:  
['http://dbpedia.org/resource/Gibraltar', 'http://dbpedia.org/resource/Europa_Point']  
(.trivenv) lyrs@LYRSTOP:/mnt/c/Code/TriviaNLQ$ python3 code/demo.py
```

Figure: CLI demo output

- ▶ automated setup
- ▶ interactive demo
- ▶

Web Application

- ▶ front-end layer that provides a user interface
- ▶ user asks a question in NL
- ▶ query is sent to the back-end layer and is fed to the text-to-SPARQL model
- ▶ the output of the model is a raw (encoded) query
- ▶ is decoded in SPARQL
- ▶ is sent to the DBpedia endpoint via API in order to retrieve the results
- ▶ all the outputs are presented in the interface

Web Application



Ask your Knowledge Base

where is sikorski memorial



Embedded Query:

```
select var_a where brack_open dbr_Sikorski_Memorial dbo_location var_a brack_close
```

Parsed Query:

```
select ?a where{dbr:Sikorski_Memorial dbo:location ?a }
```

Result:

a
http://dbpedia.org/resource/Gibraltar
http://dbpedia.org/resource/Europa_Point

Figure: Example of an NL question and output from TriviaNLQ web application

Evaluation

Dataset	<i>Valid BLEU</i>	<i>Test BLEU</i>	Epochs
LC-QUAD	60.3	58.5	71
Monument	97.6	97.3	220

Table: BLEU scores for validation and test subsets

Limitations

- ▶ Small vocabulary size
- ▶ Does not recognize named entities outside of the vocabulary
- ▶ Common limitation of NMT models being trained on a small dataset
- ▶ Questions only about monuments
- ▶ We are using a different version of DBpedia from the original model

Future work

- ▶ Train the model on the DBpedia Neural Question Answering (DBNQA) dataset for better recognition of Named entities
- ▶ Test in another version of DBpedia