# Enlargement of the Czech Question-Answering Dataset to SQAD v2.0

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December 1, 2017



# Outline

- Introduction
- Database Structure
- Database Adjustment
- Dataset Characteristics
- Conclusion and Future Work

# Question Answering

# SQAD v1.0 vs. SQAD v2.0

- SQAD v1.0
  - 3,301 QA pairs
  - short answer context
  - redundant data
- SQAD v2.0
  - 8,566 QA pairs
  - full Wikipedia articles
  - shared texts

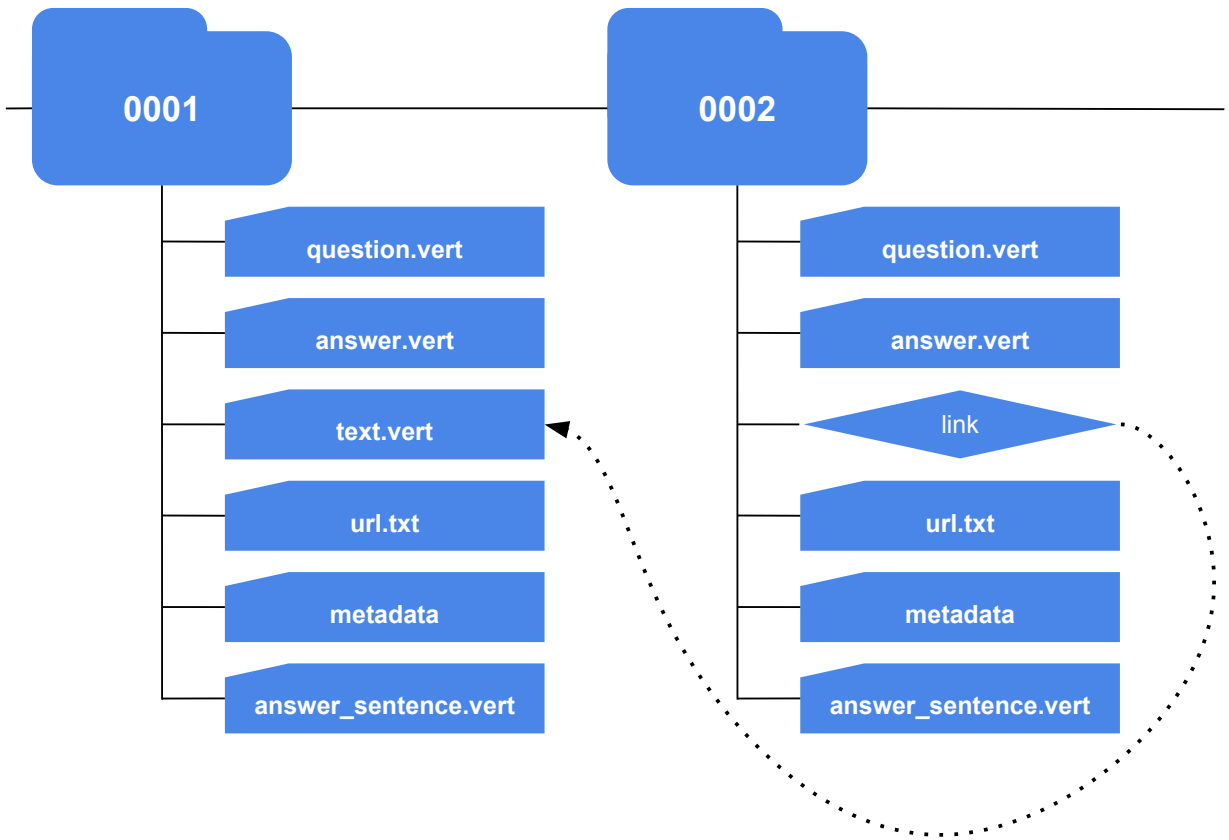
# Database Structure

# SQAD v1.0

- files in plain text form
  - original text
  - question
  - answer
  - Wikipedia URL
  - author
- does not support sharing of manual modifications

# SQAD v2.0

- generally the same structure
- texts in **vertical form**
- applying **symbolic links** to avoid document duplicities




Source: Marek Medveď

# SQAD v2.0 (Question)

| *word/token* | *lemma* | *POS tag* |
|---|---|---|
| <s> | | |
| Z | z | k7c2 |
| jakého | jaký | k3yQgInSc2 |
| roku | rok | k1gInSc2 |
| pochází | pocházet | k5eAaImIp3nS |
| školní | školní | k2eAgFnSc1d1 |
| budova | budova | k1gFnSc1 |
| v | v | k7c6 |
| obci | obec | k1gFnSc6 |
| Paršovice | Paršovice | k1gFnSc2 |
| <g/> | | |
| ? | ? | kIx. |
| </s> | | |

# SQAD v2.0 (Answer)

| *word/token* | *lemma* | *POS tag* |
|---|---|---|
| <s> | | |
| Další | další | k2eAgFnSc7d1 |
| paměti- | paměti- | k1gFnSc7 |
| hodností | hodnost | |
| v | v | k7c6 |
| Paršovicích | Paršovice | k1gFnPc6 |
| je | být | k5eAaImIp3nS |
| školní | školní | k2eAgFnSc1d1 |
| budova | budova | k1gFnSc1 |
| z | z | k7c2 |
| roku | rok | k1gInSc2 |
| **1898** | **#num#** | **k4** |
| <g/> | | |
| , | , | kIx, |
| tehdy | tehdy | k6eAd1 |
| nazvaná | nazvaný | k2eAgFnSc1d1 |
| ... | | |

# SQAD v2.0

- metadata

**05metadata.txt**

```
<q_type>ENTITY</q_type>
<a_type>ENTITY</a_type>
```

- URL

**04url.txt**

```
http://cs.wikipedia.org/wiki/Wolfram
```

# Database Adjustments

# Automatic adjustments

- tokenization
- out-of-vocabulary mistakes
- morphological errors
- semi-automatic selection of answer sentences

# Manual adjustments

- question and answer type annotation
- technical problems
  - fix URL
  - fix answer sentence

# Manual adjustments

| Question types | Answer types |
|---|---|
| Date/Time | Date/Time |
| Numeric | Numeric |
| Person | Person |
| Location | Location |
| Other Entity | Entity |
| Adjective phrase | Organization |
| Verb phrase | YES/NO |
| Clause Other | Other |

# Dataset Characteristics

# SQAD database

- dataset build form Czech Wikipedia
- number of Q&A pairs: 8,566
- number of related documents: 3,149

# Knowledge base statistics

Table: SQAD v2.0 knowledge base statistics

| | |
|---|---|
| Number of tokens | 20,272,484 |
| Number of sentences | 911,014 |
| Number of sentence selections | 6,349 |
| Number of source documents | 3,149 |

# Knowledge base statistics

Table: SQAD v2.0 question type statistics

| Question type statistics in SQAD v2.0 | |
|---|---|
| Date/Time | 1,848 |
| Numeric | 900 |
| Person | 940 |
| Location | 1,436 |
| Other Entity | 1,440 |
| Adjective phrase | 253 |
| Verb phrase | 944 |
| Clause | 774 |
| Other | 31 |

# Knowledge base statistics

Table: SQAD v2.0 answer type statistics

| Answer type statistics in SQAD v2.0 | |
|---|---|
| Date/Time | 1,847 |
| Numeric | 904 |
| Person | 943 |
| Location | 1,442 |
| Entity | 811 |
| Organization | 199 |
| YES/NO | 940 |
| Other | 1,480 |

# Conclusion and Future Work

# Conclusion and Future Work

- Conclusion
  - nearly 9000 question-answer pairs
  - annotated question/answer types
- Fututre work
  - evaluation of the AQA

# Questions and Answers