KSU Team’s Multiple Choice QA System at the NTCIR-12 QA Lab-2 Task
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Abstract
This poster describes the results of the team KISU for QA Lab-2 task in NTCIR-12. In each phase of the task, we developed three automatic answering systems for world history questions in the National Center Test for University Admissions. In order for QA systems using document retrieval to answer questions correctly, it is important to estimate exact question types, and to utilize knowledge sources and query generation methods in accordance with these types. Therefore, we designed systems that focus on knowledge sources and query generations using the underlined texts in given exams. Scores of the formal runs were 20 correct answers (49%) and 68 points with KISU-JA-02@PH1 system in Phase-1, 26 correct answers (41%) and 70 points with KISU-JA-01@PH2 system in phase-2 and 14 correct answers (39%) and 38 points with KISU-JA-01@PH3 system in phase-3. Please note that this poster only describes the systems and results for Phase-3 due to the limitations of space.

Table 1 shows the difference of the system configurations for Phase-3 in (4) adaptive utilization of underlined texts, (6) query generation and (7) knowledge sources. The systems 3-3, 4-1 and 4-3 are identical to priority-01, priority-02 and priority-03 in Fig. 5, respectively. Table 3: Systems developed with different configurations.

Results and discussions in Phase-3

Some underlined texts were unnecessary to answer sub-questions (Figure 4). Therefore, we developed the classifier which determined whether the underlined texts were necessary or not. Those were adaptively added to the set of query words.

The underlined text “the 2nd century” is necessary to answer it.

Figure 3: When the underlined texts are necessary to answer the question.

The underlined text “the trade in the southern sea” is not necessary to answer it.

Figure 4: When the underlined texts are unnecessary to answer the question.

Systems with other configuration in Phase-3

We investigated into systems with other configuration for Phase-3. In Table 3, the system 3-3 is identical to priority-01. The systems 4-1 and 4-3 are identical to priority-02 and priority-03, respectively. For an experiment, each system answered the test data for Phase-3.

Conclusion

We designed QA systems that focus on knowledge sources and query generations.

The set of sentence-based documents was effective on the sub-questions having the answer type of SENTENCE.

Appropriate introduction of the dependency analysis and semantic analysis remain for future work.