NLP (CSC 306)
Winter 2025

Project 4: Question Answering over Tabular Data

Due: various milestones

For this this project, you will work with a team to replicate or build on prior work that presents an approach to a shared task. The suggested shared task is Task 8, "Question-Answering over Tabular Data", from this year's SemEval workshop. But your team can agree to choose another shared task.

1 Learning Objectives

- Show that you can expand on the concepts discussed in class or apply them to a new domain.

- Practice planning and carrying out your own (NLP) projects.

2 What is a Shared Task?

Shared tasks are collaborative efforts in which researchers and practitioners come together to solve a common problem using shared data and evaluation measures. They promote competition, collaboration, and progress in research, and have become an important part of many academic and industrial communities.

3 Information on SemEval Task 8: Question-Answering over Tabular Data

- Website

- Osés Grijalba et al. [2024]: Paper describing the dataset and two baseline systems

- Competition page with links to data

4 Where to find Other Shared Tasks

- SemEval workshop series

- CONLL shared tasks

- List of shared tasks on the website of the Association for Computational Linguistics

5 Milestones

1. **Form teams: by Wed, 2/26**

- Form teams of three. Use Piazza if you are looking for a team or for an additional team member.
- Send an email with the names of your team members to Kristina.

2. **Team contract: by Fri, 2/28**
   Within your group, agree on a group contract that will govern your collaboration. The contract should spell out the behaviors you expect of all group members, as well as procedures for resolving impasses in the group.

   Specific questions to think about include the following:

   - What is our level of ambition for this project?
   - How will we communicate with each other?
   - How often and where will we meet?
   - How will we make sure that our meetings are productive?
   - What will we do if some member contributes significantly less than others?
   - What will we do if some member violates any agreement in this contract?

   Write a group contract and have it signed by all group members (electronically, by typing your name is ok), and submit it as a PDF document on Nexus.

3. **Project plan: by Fri, 2/28**
   Submit a project plan with the following structure:

   - Background and motivation. What is this project about? What do we hope to learn from it (not as students but as NLP researchers)?
   - Prior work. What prior work (research paper or project) does this project build on?
   - Data and software. What data and software is provided by the prior work? Do you need any additional data or software? What are you going to use? Verify that you can access and download all data you need that you can run all software you need.
   - Task plan. What steps do you need to take to carry out your project? Be as detailed as possible. Break it down as much as possible.

   In addition, your plan must contain a list of references to all prior work, data, and software that you are planning to use.

   Write your project plan (1-2 pages) using the ACL conference LaTeX style and submit it on Nexus.

4. **Intermediate report: Thu, 3/6**
   Revise and expand on your project plan.

   In particular, you should now be able to add more detail to the "Data and Software" section.

   - Describe the data:
     - What does it look like? (Provide an example and explain it.)
     - How are you going to use the data?
     - How much data do you have? How much are you planning on using?
   - Describe the software you are going to use:
     - What are you going to use?
     - And how?

   Add a section where you **describe your approach** as well as a section where you **describe the procedure you will use to evaluate your approach**.

   Finally, update your task plan. You may have to revise parts of it and you should now be able to add more detail to the steps. In addition, discuss where you are at and what is left to do.

5. **Project presentation: Wed, 3/12, in class**

   - Upload slides to Nexus.

6. **Code and data: Wed, 3/12**

   - Upload to Nexus.

7. **Research paper: Thu, 3/20**

   - **NOTE: This milestone is an individual assignment. All others are teamwork.**
   - Upload to Nexus.
   - Submit both a pdf document as well as the LaTeXsources.

References

Jorge Osés Grijalba, L. Alfonso Ureña-López, Eugenio Martínez Cámara, and Jose Camacho-Collados. Question answering over tabular data with DataBench: A large-scale empirical evaluation of LLMs. In Nicoletta Calzolari, Min-Yen Kan, Veronique Hoste, Alessandro Lenci, Sakriani Sakti, and Nianwen Xue, editors, *Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024)*, pages 13471–13488, Torino, Italia, May 2024. ELRA and ICCL. URL https://aclanthology.org/2024.lrec-main.1179/.