COMP7607: Natural Language Processing

Final Project

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Final Project

- Goal: reproduce a top-tier NLP paper from the past two years.
- 3-6 student group

Deliverables:

- Project proposal (5%): a 1–2 page proposal (chosen paper, problem addressed, research study, considerations, timeline, and so on)
- Presentation (10%): a 5-minute midway presentation with up to 6 slides (progress, challenges, key findings, and so on)
- Final report (35%): a 4-8 page report (a comprehensive overview of your project, contributions of each member, and cited references)

Project Timeline

- Project release: Oct 19
- Deadline for team information: Oct 26
- Deadline for research proposal: Nov 2
- Presentation: TBD (around Nov 23)
- Deadline for final report: Nov 30

Have one of the teammates submit the research proposal and final report befere the deadline.

Choose a Paper

- Choose a main or finding paper from the following NLP conferences:
  - ACL{2023, 2022}
  - EMNLP{2022}
  - NAACL{2022}
- Refer to ACL Anthology: https://aclanthology.org/

Choose a Paper

- **Research topic**: Find the problem tackled in the paper interesting.
- **Public dataset**: Check that the data you will need is publicly accessible.
- **Code**: In many cases, the authors may have made code available; this may be a blessing or a curse (thoroughly review the code!).
- **Resource**: Estimate the computational requirements for reproducing the paper. ✗ large-scale models or datasets
  - Notebook (Google Colab, etc), HKU GPU Farm, Google cloud

Project proposal (5%)

- Some study types you may perform:
  - **Method Study**: Reproduce the baselines in the paper and come up with your own different hyper-parameters, initialization, objectives, and components. (primarily focus on the central challenge of the task studied)
    - Change hidden size/learning rate; BERT -> ELECTRA; autoregressive -> non-autoregressive ...
  - **Model/Dataset Analysis study**: (1) Reproduce results of various model ablations from the paper to analyze importance; propose one new ablation/model variant and empirically test it. (2) propose different analyses on the model (e.g., test on new datasets, error analysis) and delve deeper; what does the data tell us? Can we use other interpretation techniques or evaluation measures to interpret model behaviors? ...
    - Compare different objectives/data scale; SQuAD -> SQuAD 2.0

Presentation (10%)

- 5-minute midway presentation with up to 6 slides.
- Basically, your proposal + (initial) results
- Content:
  - Brief background
  - Study plan & settings
  - Results
  - Timeline (timeline table, gantt chart, etc)
  - Detailed Individual Contribution

Remember to keep your presentation concise and focused on the most important points.

Final Report (35%)

- A 4-8 pages project report.
- ACL templates: https://github.com/acl-org/acl-style-files (LaTeX with academic style)
- Collaboration:
  - Coding: GitHub
  - Writing: Overleaf

Any question?

Project instructions
https://github.com/qtli/COMP7607-Fall2023/blob/master/project/