

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 team

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 reference)

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

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.
- **Resource:** Estimate the computational requirements for reproducing the paper.
 - 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.
 - 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

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/>