CS-6390 Project, Phase 3 and Presentations, Spring 2021

The Phase 3 submission for each team's IE project is due on Monday, April 19, 2021 by 11:59pm. Please submit the following items on Canvas:

- All of the source code that your team wrote for your IE system. Please submit every file that you created, even if it simply invokes an external tool. But you do not need to submit external libraries or external tools that your IE system needs. We will not be compiling or running your IE system ourselves. The purpose of the source code submission is so that we can verify that you wrote your own code and so that we can inspect the code in case we have questions about the system's design or what it does.
- Instead of a project report, you will need to submit a set of final project slides on April 29, as described in the Presentation section. (Note that this is a change from the original project descripton, to avoid duplication of effort.)

In addition, each team will be required to give a live demonstration of their IE system with the TA (Tianyu Jiang). Tianyu will be sending out a sign-up sheet, so be sure to sign up for a demonstration slot. Details on the live demonstration are below.

Phase 3 Project Grading

The grade for Phase 3 of the IE project will based on the following:

- The ability of your team to give a live demonstration of your IE system's performance with the TA and to answer questions about its design.
- The degree to which your team fixed the problems and addressed any issues that were raised in your Phase 1 & 2 project feedback from Prof. Riloff. *Please be sure to resolve those problems and issues!*
- The quality of your Phase 3 IE model and the degree of novelty of the Phase 3 IE model compared to the Phase 1 & 2 IE models. *For the Phase 3 submission, the expectation will be that you have either (1) implemented a brand new type of model for your IE task, or (2) made substantial changes and/or additions to your previous models.*
- The quality of the evaluation of your IE system. The evaluation should include an appropriate use of the data set, correct application and presentation of your evaluation metrics, and full evaluation in terms of recall and precision for each type of label that your system produces. *When possible, you should compare the performance of your Phase 3 model with the performance of your previous models.*
- NEW: Analysis. Your team should conduct some analysis of your best-performing IE model to better understand its behavior. Some ideas include: (1) ablation studies to show the performance of the model with and without various subcomponents, (2) a manual examination of the types of cases that the system typically gets correct and the types of cases that the

system typically gets wrong, (3) a confusion matrix showing how frequently each label is confused with other labels. These are just a few ideas – any type of analysis that sheds light on the behavior of your IE system is ok.

- The quality of your team's submitted final project slides.

NOTE: In most cases, the Phase 3 system will likely perform better than the Phase 1 and 2 systems because you've gained experience with the IE task, but it is not a requirement that this be the case. For example, you may wish to try a completely different type of IE model, but it may turn out that the first type of model performed better. This is perfectly fine, so long as the models and evaluations were done sensibly and correctly. Don't be afraid to try something new just because you're not sure how well it will perform!

Phase 3 Live Demonstration

Each team will be required to meet with Tianyu for 15 minutes soon after the April 19 deadline to give a live (via Zoom) demonstration of their IE system. The purpose of this demonstration is (1) to show Tianyu that you have a working IE system by demonstrating your model's performance on a few examples, and (2) to answer questions that Tianyu may have about your system's design.

Tianyu will be expecting you to run your IE system on some examples. (You do not need to train your system during the demonstration, just run the trained model.) For each example, please plan to show him the input text as well as the output generated by your IE system for that specific input text. We are <u>not</u> looking for evaluation numbers during this demonstration (you can show them if you want, but they are optional). You should be able to show Tianyu the labels produced by your system as output. For example, for a Named Entity Recognizer, you should plan to show Tianyu the sentence or document being given to the system as input and then show him the entities and labels produced by your system.

In-Class Project Presentations

Every team must give a 10-minute presentation of their project during class time on either April 22 or April 27. The schedule for the presentations is shown below, as "**Team Name**: Task".

Thursday, April 22

1. **FantasticNER**: Named Entity Recognition
2. **TYHD**: Named Entity Recognition
3. **Free Bird**: Named Entity Recognition
4. **AwesomeNER**: Named Entity Recognition
5. **Corporate Acquisition Event Extraction**: Event Extraction (Corporate Acquisitions)
6. **ProTeam**: Event Extraction (GENIA)
7. **Infomaniacs**: Event Extraction (Disease Outbreaks)

Tuesday, April 27

1. **Xtrack**: Event Extraction (Seminar Announcements)
2. **Extraction Action**: General Domain Event Detection
3. **Sophisticated Shark**: Semantic Lexicon Induction
4. **Persuasian Extraction**: Extracting Persuasive Phrases
5. **Definitively the Best**: Definition Extraction
6. **Opinion Dominion**: Sentiment-Aspect Extraction (Restaurant Reviews)
7. **TemporalFun**: Temporal Relation Extraction

Your in-class presentation should describe your IE project primarily for the other students in the class, so that everyone can learn about the task that you tackled and the IE system(s) that you built. Details on the content of the slides are on the next page.

Final Project Slides

For the In-class Presentation, your talk and slides should present the following information:

Name: Team Name and Team Member(s)

IE Task: Explain your IE task in sufficient detail that someone hearing about it for the first time can understand! Everyone in the class should be able to understand exactly what your task entailed.

Resources List: A list of all external software tools and data or other resources that your IE system used, along with a URL showing where you got each one from.

Best IE Model: Describe the architecture of the best-performing IE system that you developed over the course of the semester! For most teams, this will likely be your Phase 3 system. But if your Phase 1 or Phase 2 system ended up being your best model, then you should present that one. Be sure to explain all the technical components of your model.

Experimental Results: Describe how you evaluated the performance of your IE system, including how the data set was used and the evaluation metrics that you applied. Present tables and/or figures showing the results of your evaluations.

Analysis: Present the results of the analysis that you performed to shed light on the behavior of your IE system.

Lessons Learned: Briefly summarize any lessons that you learned during the project! For example, what was most successful, disappointing, surprising, or interesting to you.

For the Phase 3 portion of the project, you must submit your final project slides in .pdf format by 11:59pm on Thursday, April 29 (in lieu of the original project report requirement).

You can re-use the slides from your in-class project presentation and add more slides if you wish. Feel free to include any additional information that you'd like Prof. Riloff to know in your final set of slides. There is no limit on the number of slides.

In addition to the topics mentioned above, please add slides that include the following information:

Phase 3 model: If you presented your Phase 1 or Phase 2 model during the in-class presentation, then create additional slides describing the IE model that you built specifically for Phase 3.

Phase 3 novelty: EVERYONE: List the differences between your Phase 3 IE model and your Phase 2 IE model.

Contributions: For 2-person teams, describe the specific contributions of each team member. Remember that each team member must have clearly defined individual responsibilities.