Towards Conversational Data Annotation: Personalized Annotation Explanation Generation via Large Language Models

Thesis Proposal

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Contents

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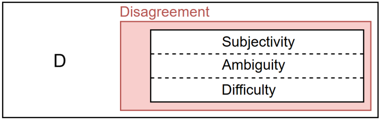
- Provide annotators with explanations that
  - address subjectiveness (objectify)
  - elaborate on issue (disambiguate, simplify)

Problem

Overview



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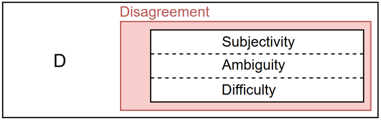

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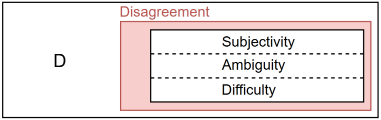

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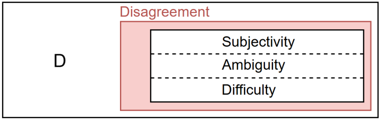

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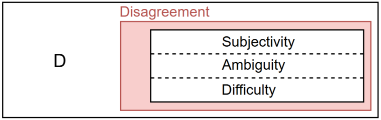

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- Generate explanations for all possible labels
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- Reannotate $\mathcal{D}$ with the addition of the explanations
- Quantify helpfulness based on change in agreement

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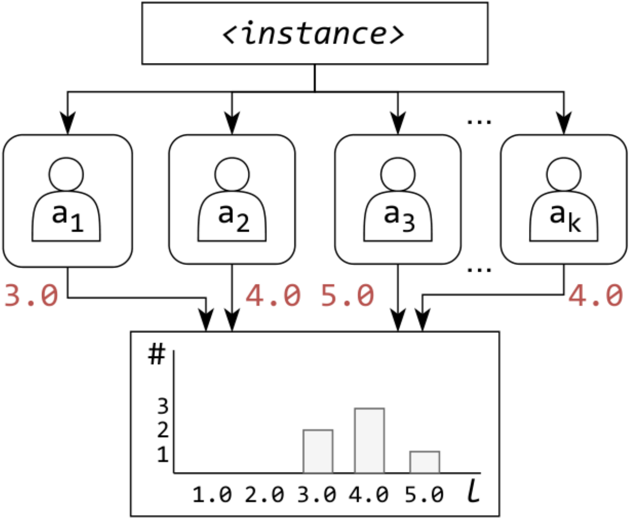
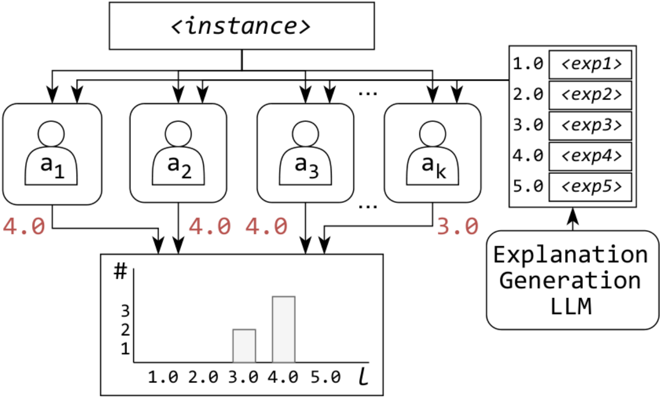
Default



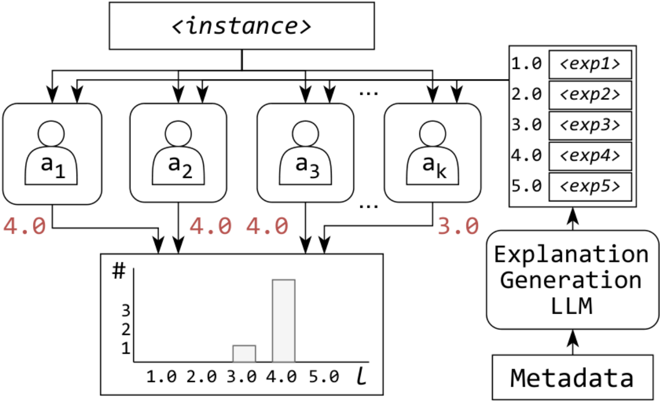
Problem

Basic Explanations



Problem

Inclusion of Metadata



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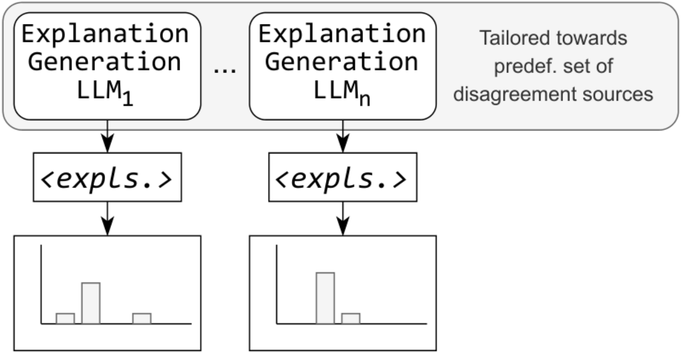
Tailored Models



Research Questions

- How does providing explanations for each labeling option in a data annotation task affect the agreement between annotators?
- How can metadata such as sociodemographic information about annotators and existing annotations be used to improve explanation generation?

Thesis Goals and Tasks to Tackle Each Goal

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- Analyze how annotations change as a result

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- POPQUORN (Pei & Jurgens, 2023)

Task	Description	Data	Total Annotations	Number of Annotators	Instances	Average Labels per Instance
Offensiveness rating	Rate comment offensiveness using a 1-5 scale	Ruddit	13,036	262	1,500	8.7
Question Answering	Read a passage and answer a question through highlighting the text	SQuAD	4,576	459	1,000	4.6
Text rewriting / Style transfer	Read an email and revise it to make it sound more polite	Enron	2,346	257	1,429	1.6
Politeness Rating	Rate the politeness of an email using a 1-5 scale	Enron	25,042	506	3,718	6.7
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  - Given annotators' backgrounds (gender, race, age, occupation, education)
  - Example:
    `635, 0, Don't tell them just let them and their liniage die out so we can be free of humans without brain cells, 3.0, Man, White, 35-39, Unemployed, High school diploma or equivalent`

Outline

- Introduction
- Related work
    - Human-LLM collaboration
        - Data annotation
    - Annotator Disagreement
    - Explanation generation
    - LLM personalization
- Datasets
    - POPQUORN
- Approach
    - Sources of disagreement
    - Fine-tuning LLMs
        - Predicting disagreement source
        - Generating tailored explanations
- Annotation Experiments
- Evaluation
    - Inter-annotator agreement
    - Impact of disagreement type
- Conclusion