Logical Fallacy Detection for Randomized Sentences

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Abstract—This document is a model and instructions for LaTeX. This and the IEEEtran.cls file define the components of [title, text, heads, etc.]. *CRITICAL: Do Not Use Symbols, Special Characters, Footnotes, or Math in Paper Title or Abstract.

Index Terms—component, formatting, style, styling, insert

I. INTRODUCTION

Logical Fallacies are statements that aim to be logically sound but are not. They are easily used to spread misinformation and sometimes dangerous ideas. This is related to detecting multiple types of logical fallacies in natural language.

II. OVERVIEW

A. Dataset

This is generated through repetitive prompting on online AI tools to get data across multiple fields(not biasing towards one). It has a statement and the type of fallacy as the 2 columns. The total size is around 12000 with around 500 statements for each type of 21 fallacies.

B. Model

Many models were applied to the datasets. The basic models were overfitting on a small number of fallacies. While we moved to better models like Ada-boost increasing the types of fallacies our model started performing better.

C. Accuracies

We got accuracies in the range of 71 to 99 per cent. We noticed that the ones with high accuracy performed badly due to overfitting on random examples. While ones with range of 70-80 performed much better.

D. Abbreviations and Acronyms

- NL - Natural Language,
- ML - Machine Learning
- LFD - Logical Fallacy Detection

E. Scope of Improvement

While the dataset has varieties of topics covered fallacies are present in many different forms. An effort to incorporate these would be really helpful.

Increasing accuracy while not over-fitting is also a task one can take on.