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Automatic Propaganda Technique Classification in Lithuanian News Articles Using Pretrained Language Models

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Propaganda is a powerful tool used to influence the opinions or actions of the audience, and propaganda techniques are the methods used to achieve it. For centuries, propaganda had a neutral connotation; however, it has recently become associated with foul intentions, manipulation, and deception. The development and increased availability of communication technologies created a favorable environment for the rapid dissemination of digital propaganda. One of the ways to spread it became the news media. Fortunately, fast advancement in machine learning technologies has led to the development of systems that can automatically detect and classify propaganda in news articles. The recent propaganda technique classification studies took advantage of the creation of pretrained language models (PLMs). The rich, context-aware text representations created by PLMs helped to capture subtle propaganda rhetorical cues and achieve state-of-the-art results. However, most studies focus on the English language, creating a research gap for various low-resource languages, including Lithuanian. This study focuses on the classification of propaganda techniques in Lithuanian news articles using three pre-trained language models – multilingual BERT, XLM-RoBERTa, and LitLat. The experiments were performed on a new Lithuanian propaganda dataset created by the Vilnius University propaganda and disinformation research project ATSPARA. In addition to the model performance comparison, this research focuses on model interpretability using Explainable AI frameworks, extensive data analysis, and linguistic differences between propaganda techniques.

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