POLIBRA: Balancing POLItical opinions via neuro-symbolic Reasoning and Argumentation

Funded by the European Union

UK Research and Innovation

Usage/License

Download

Available at: https://github.com/The-obsrvr/POLIBRA

Researchers

- Siddharth Bhargava, FBK Povo & UDC A Coruña
- Sara Tonelli, FBK Povo
- Patricia Martín Rodilla, UDC A Coruña & IEGPS-CSIC Spain

Summary

POLIBRA is an open-source, modular neuro-symbolic framework that transforms raw discussions into Bipolar Argument Structures (BAS), combining neural argument mining with symbolic reasoning. It extracts argumentative structures from long-form discussions using retrieval-augmented LLMs and evaluates argument strength through explainable symbolic reasoning. Designed for complex, noisy, and context-dependent discourse, it enables transparent analysis of persuasiveness, argumentative effectiveness, and political strategies.

Key Features

- **Neural argument mining pipeline** for discourse segmentation, relation prediction, and automatic BAS construction using retrieval-augmented iterative LLM reasoning.
- **Symbolic reasoning module** that evaluates argument strength through gradual propagation of support and attack relations.
- **Explainable analysis** of persuasiveness, argumentative effectiveness, and key supporting and attacking arguments.

What We Offer

- An **end-to-end framework** for transforming discussions into structured argument graphs for reasoning and analysis.
- A **modular, extensible, and scalable architecture** supporting visualization, human-in-the-loop inspection, and customization for different domains and reasoning frameworks.

Collaboration Objectives

- **Support applications** in explainable AI, decision-making, recommendation systems, and automated summarization.
- **Promote transparency**, democratic deliberation, and public engagement.
- **Advance political and social science research** on discourse analysis, persuasion, and argumentative strategies.

hybrids

HYBRIDS Website

www.hybridsproject.eu

Get in Touch

siddharth.bhargava@fbk.eu