1. Motivation

We introduce a web debating platform for modeling and analyzing argumentative discussions by offering different means of opinion analysis, that aims to help contributors in understanding the different clusters of opinions. This way, sense-makers obtain a clear picture of the validity, the justification strength and the acceptance of each individual opinion.

The platform provides a range of functionalities:

i. A semantic representation for organizing and representing the user-generated arguments and their relations.
ii. A formal framework, called s-mDiCE, for evaluating the strength value of each argument individually.
iii. A collection of Machine Learning Algorithms (ML) for the clustering of features and the extraction of association rules.

2. Knowledge Map Schema

This argument map is designed and meant to organize discussions, through Semantic Web technologies for making opinions and their relations available in the form of RDF statements.

3. User Opinion Evaluation

We use a multi-dimensional framework (s-mDiCE) for evaluating users’ reactions (comments and votes), based on different metrics.

4. Automated Opinion Analysis

We propose an approach for analyzing the user behavior in social communities, where people express their opinions in support of or against other opinions.

This opinion analysis aims at:

i. Identifying useful opinions expressed through the opinion exchange process.
ii. Discovering interesting relationships among participants and opinions.
iii. Determining clusters of users who share similar views and profile characteristics.

Towards this aim, we leveraged the following ML algorithms.

5. Future Work

i. Visualizing the different clusters (users and viewpoints).
ii. Evaluating the system with real users and large datasets of discussions.
iii. Improving the user interface so that can be more usable and intuitive.

References


The platform is available at the following web link: http://www.ics.forth.gr/ll/apospsis

Application Scenario

Debate Analysis Results

Query: Find groups of users whose opinions are close to those expressed by different authors, related to specific debate issue

Issue: 1. How to make a city (Heraclion) more livable?

The analysis showed that the users (Bikakis) share similar opinions with the group of users (Solbad,Korner) and share dissimilar opinions with the group of users (Matthews,Oliver) related to the following positions:

- One of the most important things you can do for the city are the new parks and more green space such as planting trees.
- Acts are extremely important to city living because they are the same thing in which a city expresses its identity.