Querying Structured Argumentative Dialogues

1ST SUMMIT ON GENDER EQUALITY IN COMPUTING (GEC 2019)

DIMITRA ZOGRAFISTOU, GIORGOS FLOURIS, THEODORE PATKOS, DIMITRIS PLEXOUSAKIS

FOUNDATION FOR RESEARCH AND TECHNOLOGY (FORTH)

JUNE 2019
Problem description

Motivation: Investigation of the informational requirements during data extraction from online debates.
- Searching with dialogical criteria like: structure of opinions, Interactions, Withdrawals

ArgQL: Query Language targeting argumentative data
- Answers queries like: “search for evidence for a particular conclusion”.
- Simple and easily to be expressed queries – relevant terminology

Problem description: Implementation of the language and query execution in real datasets.
Argumentation data model

Debate graph: \( D = (A, R) \)
- **A**: set of arguments
- **R \subseteq A \times A**: set of relations

- The data includes:
  - \(<\{\text{prop}_1, \text{prop}_2\}, \text{concl}_1\>>
  - \(<\{\text{prop}_3\}, \text{concl}_2\>>
  - \(<\{\text{prop}_4\}, \text{concl}_3\>>
  - \(<\{\text{prop}_5, \text{prop}_6\}, \text{concl}_4\>>

- \"concl_1\" in_conflict \"concl_2\"
- \"concl_1\" in_conflict \"prop_1\"
- \"concl_4\" equivalent \"concl_1\"
ArgQL Language – Query examples

**Q1:** Find arguments which attack the attackers of those having a conclusion “Cloning is going to be awesome”, or an equivalent one.

```
match  ?arg1 attack/attack  ?arg2:< ?pr , “Cloning is going to be awesome” >
return  ?arg1, ?arg2
```

**Q2:** Find arguments with the proposition “p1” in their premise set and then find those arguments with which the matches of the first argpattern have common premises.

```
return  ?arg1, ?arg2
```