Argument Mining Scientific Arguments in Terms of Semantic Relations and Argument Schemes

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Challenge: Explosion in Number of Scientific Publications

Impossible queries currently:

- What are the best arguments for/against claim C?
- What prior work does C depend on and has that been challenged?
- What is the history of research leading up to the arguments for/against C?

Solution: Argument Mining

Goal: <u>Argument</u> Mining Full-Text Bio/Biomed Research Articles

Argument: Presentation of author's reasoning on (old or new) data for validation by other scientists

Argument consists of
- one or more premises (reasons)
- conclusion

(premise or conclusion may be implicit)

Goal: Argument <u>Mining</u> Full-Text Bio/Biomed Research Articles

Mining: Automatically inferring argument's premises and conclusion

• even when implicit

• very accurately (high precision),

• inferred argument is represented in logic representation to support further reasoning