

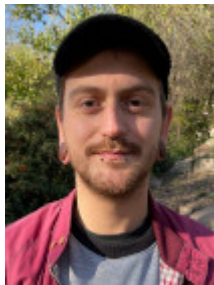
# Image Retrieval for Arguments Using Stance-Aware Query Expansion

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## ArgMining 2021



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Kiesel<sup>1</sup>**



**Nico  
Reichenbach<sup>2</sup>**



**Benno  
Stein<sup>1</sup>**



**Martin  
Potthast<sup>2</sup>**

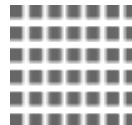
<sup>1</sup>

**Bauhaus-  
Universität  
Weimar**



<sup>2</sup>

**UNIVERSITÄT  
LEIPZIG**



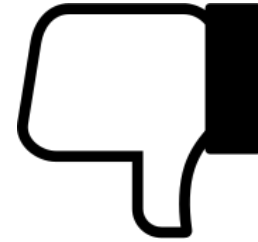
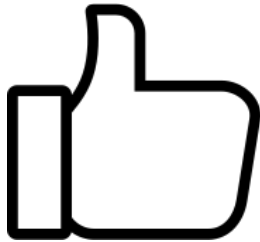
<sup>1,2</sup>

**Webis**



**Opinion:** To solve the carbon crisis, we need to talk nuclear power

**Nuclear technology's role in the world's energy supply is shrinking**



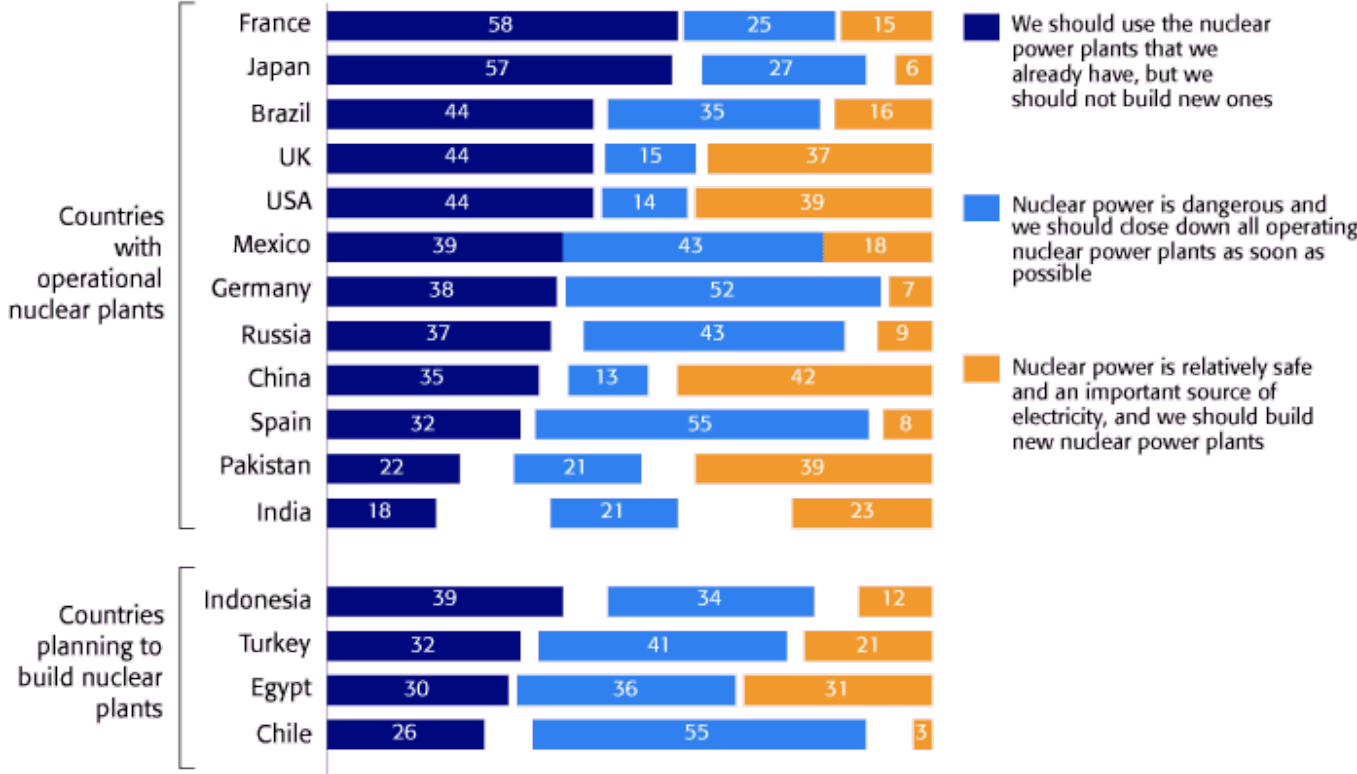
Many people say that ...



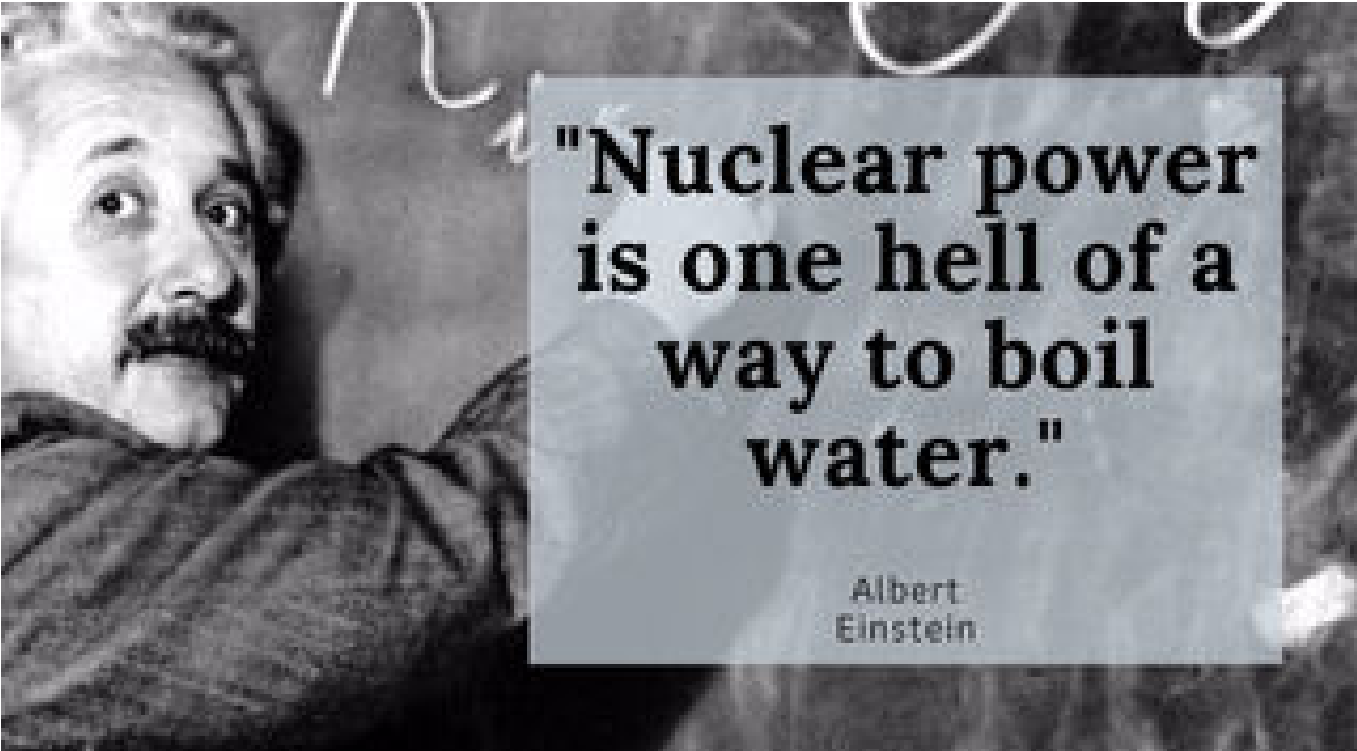


# Recent surveys show that ...

Views on Use of Nuclear Energy for Electricity Generation  
By Country, 2011

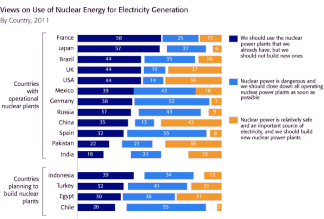
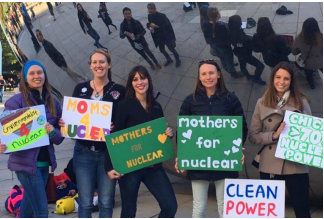


Already Einstein knew that ...



**"Nuclear power is one hell of a way to boil water."**

Albert Einstein

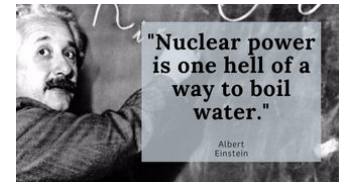
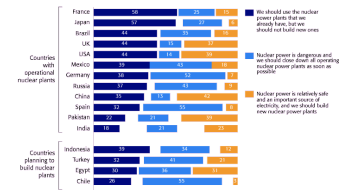


It is kind of silly that ...

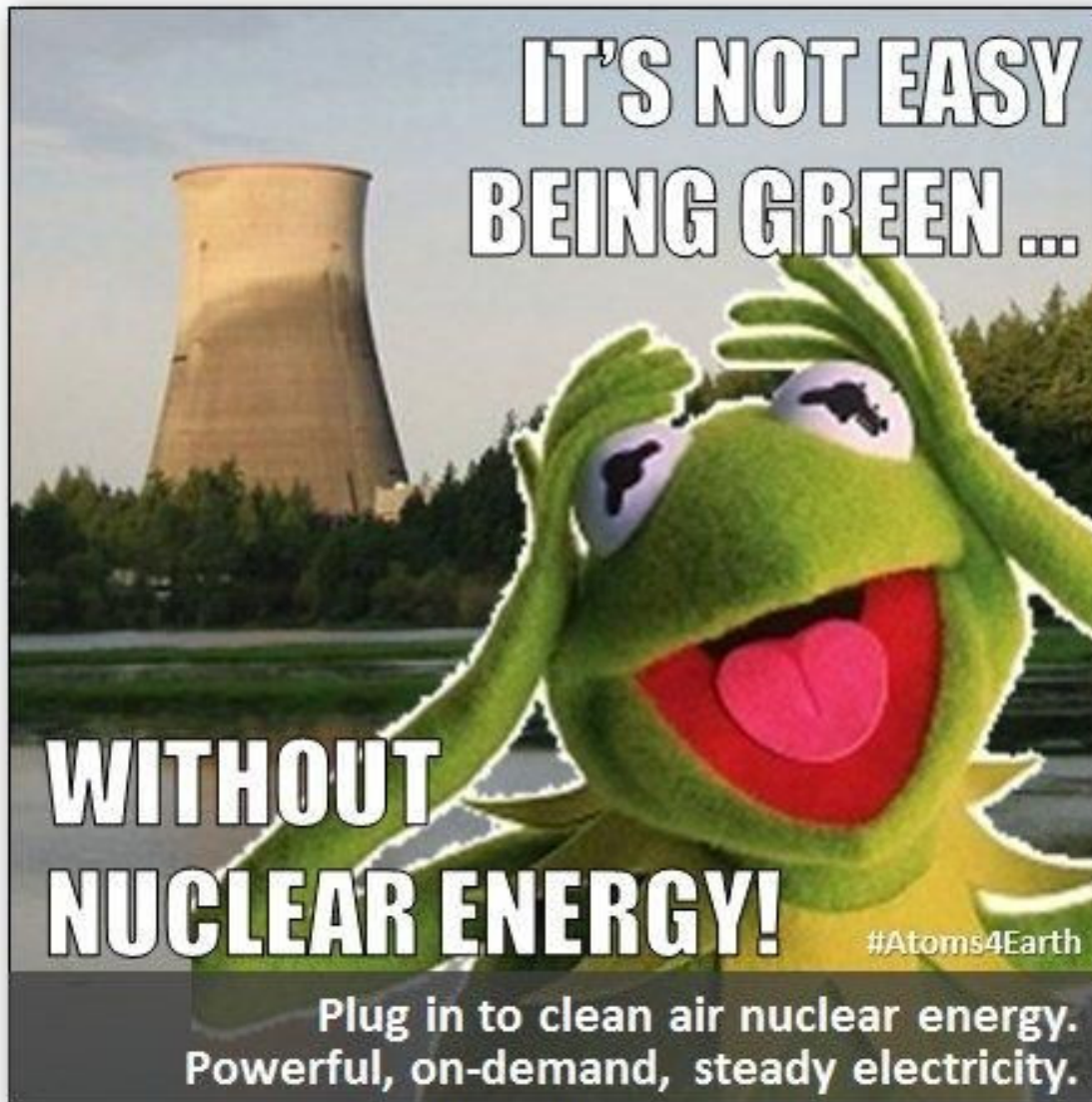


Views on Use of Nuclear Energy for Electricity Generation

By Country, 2011



Look! This is funny. And it is of course true that ...



**IT'S NOT EASY  
BEING GREEN ...**

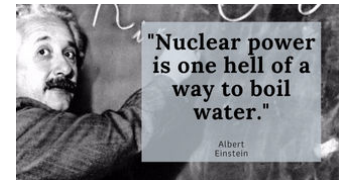
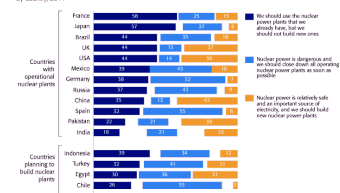
**WITHOUT  
NUCLEAR ENERGY!**

#Atoms4Earth

Plug in to clean air nuclear energy.  
Powerful, on-demand, steady electricity.



Views on Use of Nuclear Energy for Electricity Generation  
By Country, 2011







# Nuclear energy

cartoons  
 memes

covers  
 protesters

photos  
 quotes

posters  
 statistics



Can Nuclear power save us? – NUES  
web.northeastern.edu



Californians for Green Nuclear Power  
cgnp.org



Anti-nuclear energy protestors take ...  
alamy.com



Business Cartoon | TOONPOOL  
toonpool.com



Nuclear Energy Grows: Global Poll ...  
globescan.com



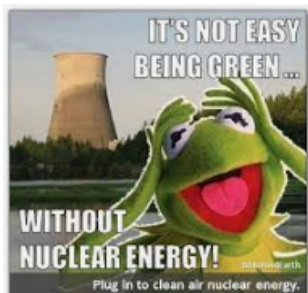
marketers oppose clean energy subsidies ...  
redgreenandblue.org



Anti-Nuclear Opposition | comparenuclear  
comparenuclear.wordpress.com



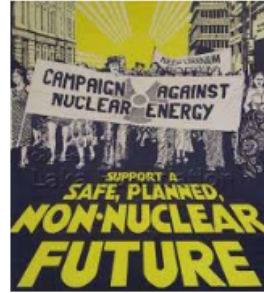
No to nuclear: Japan wants reactors ...  
aljazeera.com



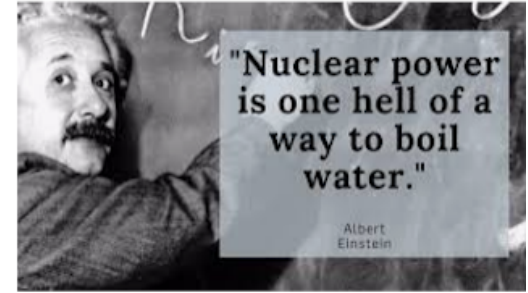
Orano U.S. on | Nuclear energy, ...  
pinterest.dk



zero emissions must use nuclear energy  
policyoptions.irpp.org



www.laka.org | anti-nuclea...  
laka.org



26 Famous Quotes About Nuclear Energy  
getintonuclear.com

# Image Retrieval for Arguments Using Stance-Aware Query Expansion

## Task:

Given a keyword query suggesting an issue or a claim for a topic, retrieve as two ranked lists those and only those images that can assist someone in (1) supporting and (2) attacking it.

Example: Looking for images supporting someone arguing **against** nuclear energy.

# Image Retrieval for Arguments Using Stance-Aware Query Expansion

Task:

Given a keyword query suggesting an issue or a claim for a topic, retrieve as two ranked lists those and only those images that can assist someone in (1) supporting and (2) attacking it.

Example: Looking for images supporting someone arguing **against** nuclear energy.



 Off-topic

# Image Retrieval for Arguments Using Stance-Aware Query Expansion

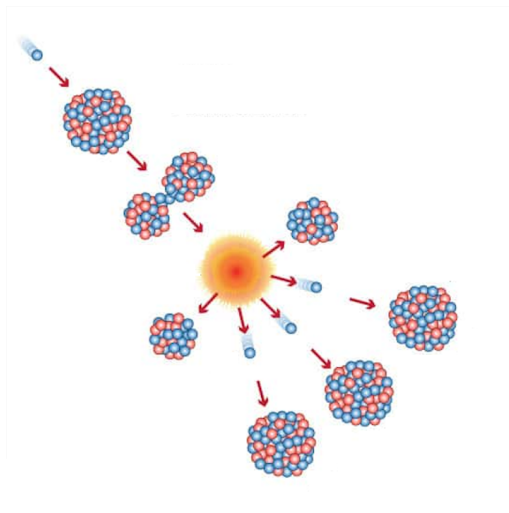
Task:

Given a keyword query suggesting an issue or a claim for a topic, retrieve as two ranked lists those and only those images that can assist someone in (1) supporting and (2) attacking it.

Example: Looking for images supporting someone arguing **against** nuclear energy.



⊘ Off-topic



⊘ Not “argumentative”



# Image Retrieval for Arguments Using Stance-Aware Query Expansion

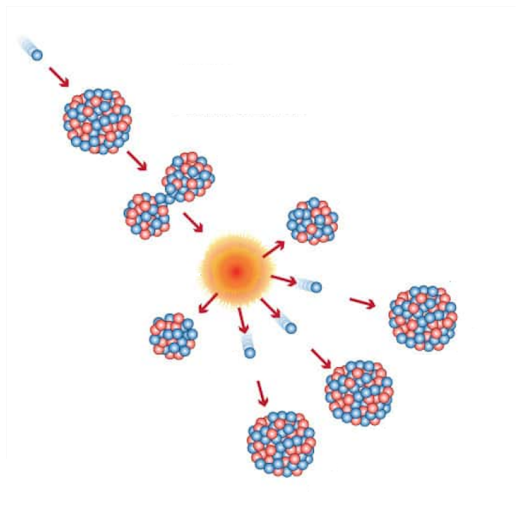
Task:

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Example: Looking for images supporting someone arguing **against** nuclear energy.



⊘ Off-topic



⊘ Not “argumentative”



⊘ Not supporting the stance

# Nuclear technology's role in the world's energy supply is shrinking



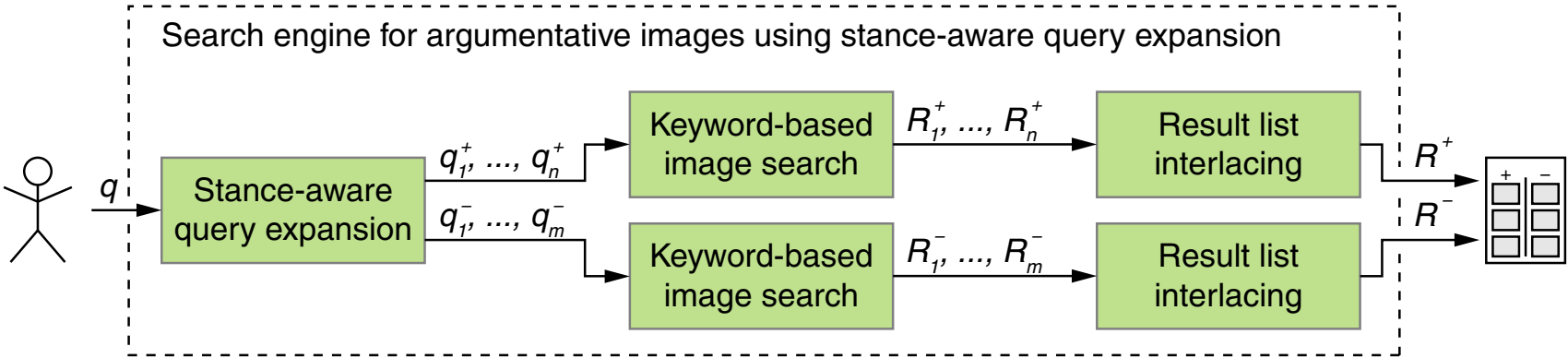
## Nuclear technology's role in the world's energy supply is shrinking

Anniversaries of the Fukushima and Chernobyl disasters highlight the challenges of relying on nuclear power to cut net carbon emissions to zero.



A view of the Chernobyl reactor complex in Ukraine. The 1986 disaster, along with that at Fukushima in 2011, has cooled global enthusiasm for nuclear technology. Credit: Sean Gallup/Getty

# Image Retrieval for Arguments Using Stance-Aware Query Expansion



## Method 1. “Good-Anti”

User query ( $q$ ): nuclear energy

Pro query ( $q_1^+$ ): nuclear energy good – search → images for “pro” ( $R^+$ )

Con query ( $q_1^-$ ): nuclear energy anti – search → images for “con” ( $R^-$ )

## Method 2. “Positive-Negative”

Using top 5 words from a sentiment dictionary by co-occurrence with query terms

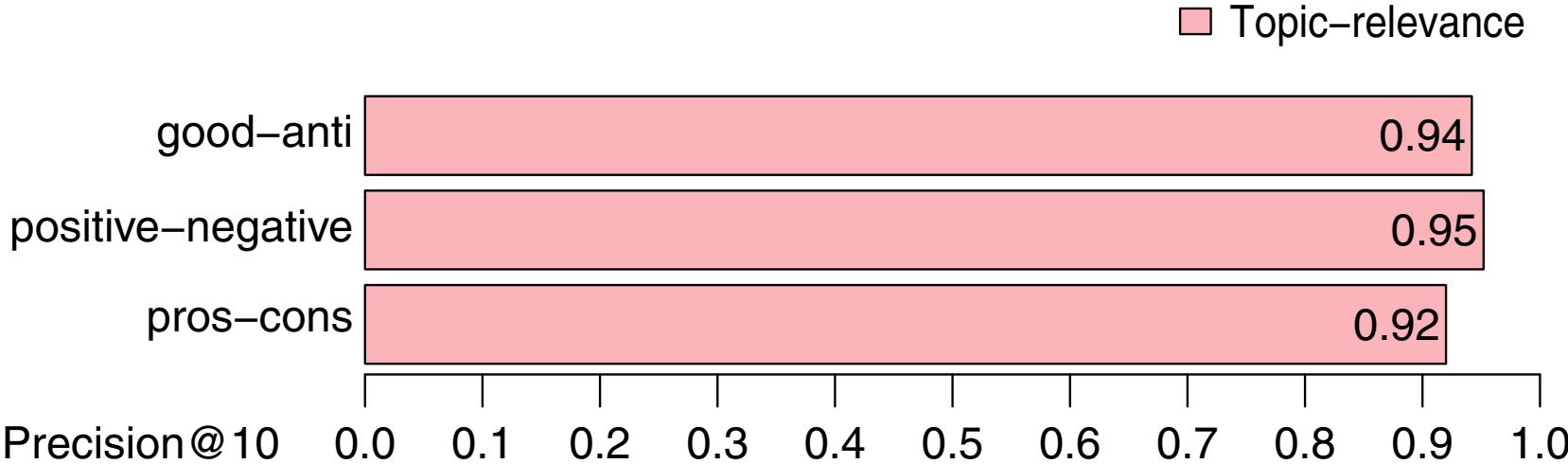
## Method 3. “Pros-Cons”

Using top 5 stance-specific words in pro/con arguments for the query (per [args.me](https://args.me))



# Image Retrieval for Arguments Using Stance-Aware Query Expansion

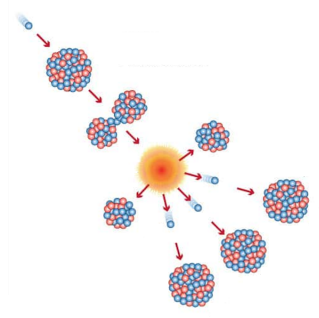
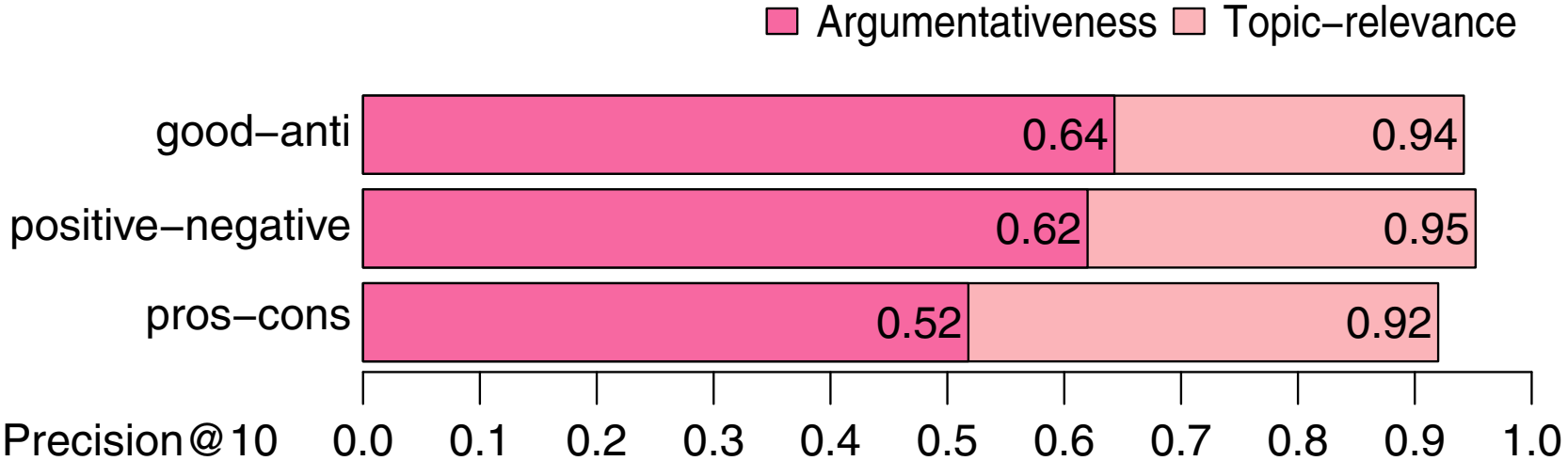
Evaluation on 20 Touché topics.



 Off-topic

# Image Retrieval for Arguments Using Stance-Aware Query Expansion

Evaluation on 20 Touché topics.



⊘ Not “argumentative”

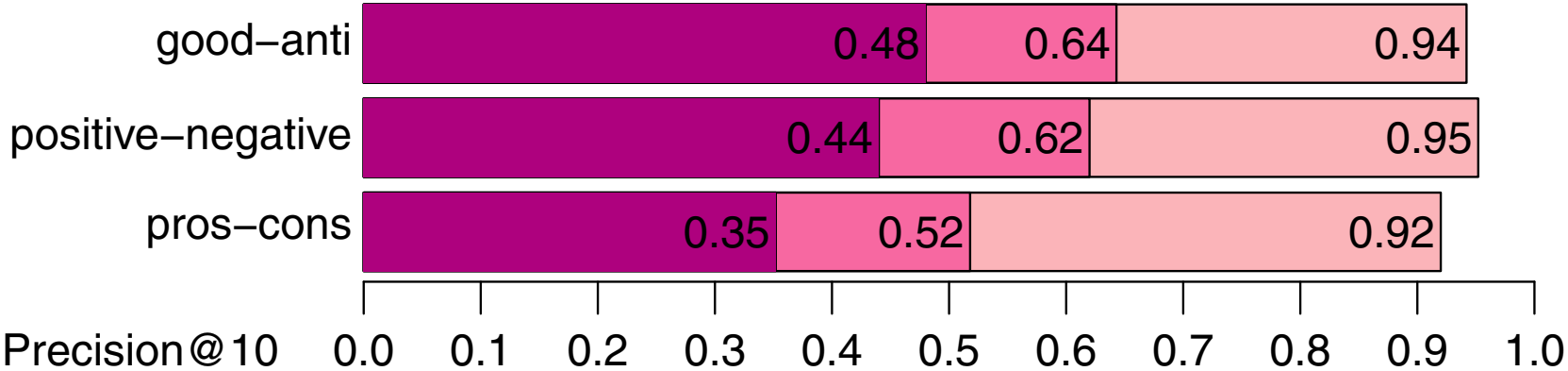


⊘ Off-topic

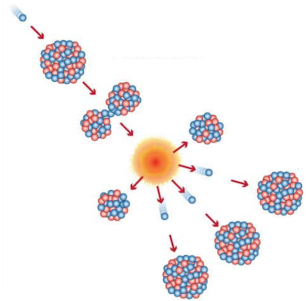
# Image Retrieval for Arguments Using Stance-Aware Query Expansion

Evaluation on 20 Touché topics.

■ Stance-relevance ■ Argumentativeness ■ Topic-relevance



⊘ Not supporting the stance

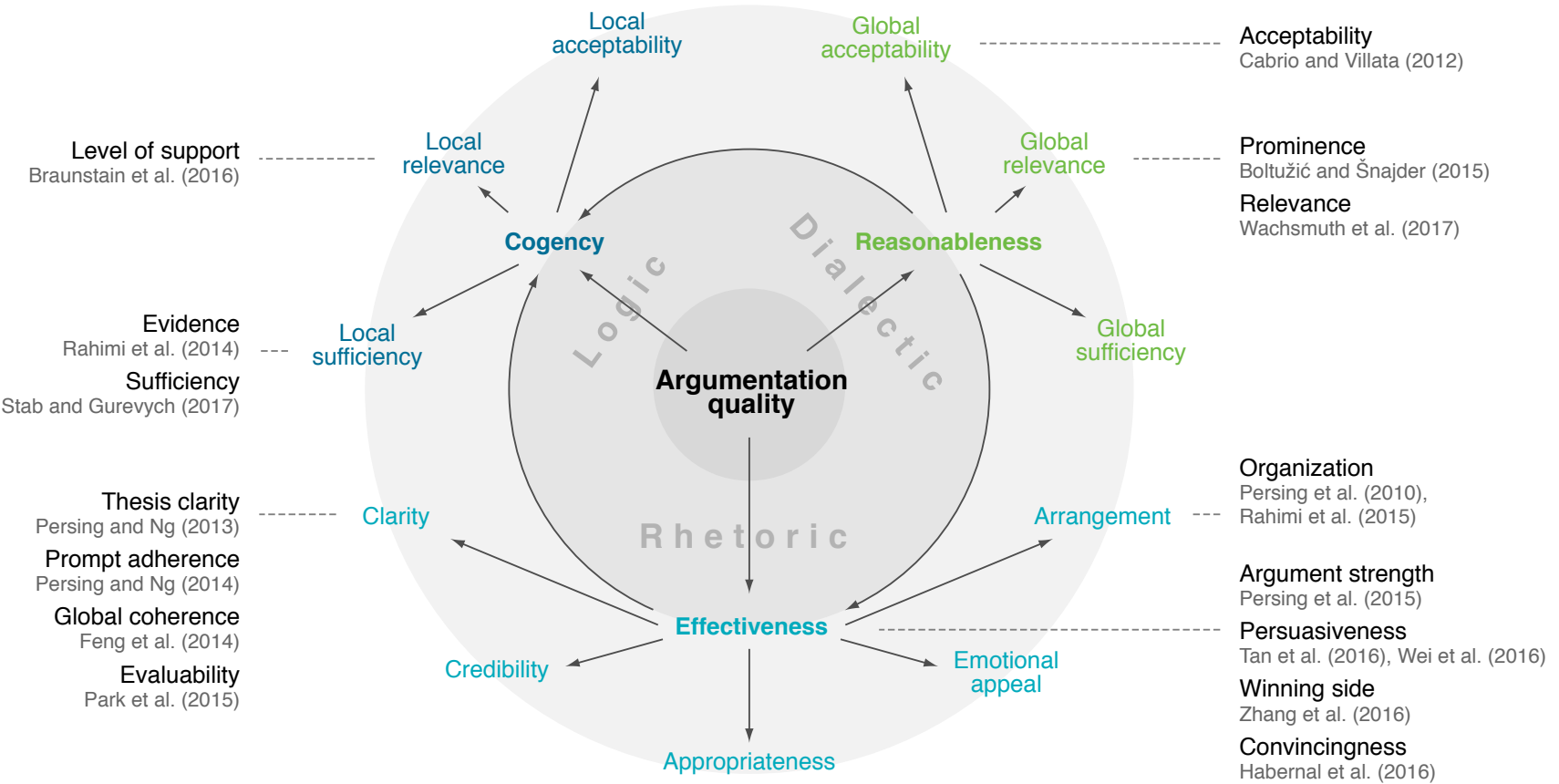


⊘ Not “argumentative”



⊘ Off-topic

# Image Retrieval for Arguments Using Stance-Aware Query Expansion



Wachsmuth et al., Computational Argumentation Quality Assessment in Natural Language. EACL 2017.



## Nuclear technology's role in the world's energy supply is shrinking

Anniversaries of the Fukushima and Chernobyl disasters highlight the challenges of relying on nuclear power to cut net carbon emissions to zero.



A view of the Chernobyl reactor complex in Ukraine. The 1986 disaster, along with that at Fukushima in 2011, has cooled global enthusiasm for nuclear technology. Credit: Sean Gallup/Getty

## Shared Tasks

- ❑ Task 1: Argument Retrieval for Controversial Questions.
- ❑ Task 2: Argument Retrieval for Comparative Questions.
- ❑ Task 3: **Image Retrieval for Arguments.**

## Important Dates

- ❑ November 15, 2021: Registration opens.
- ❑ May 13, 2022: Approaches submission deadline.
- ❑ June 9, 2022: Participant paper submission.



More info now: [touche.webis.de](https://touche.webis.de)