Argument Technology in Intelligence Analysis

Prof. Chris Reed

Centre for Argument Technology
University of Dundee
Dundee, UK

www.arg.tech

Centre for Argument Technology

20-year track record, 200 research papers, 100,000 users

Interdisciplinary team covering philosophy, AI, software engineering, linguistics, NLP, deep learning.

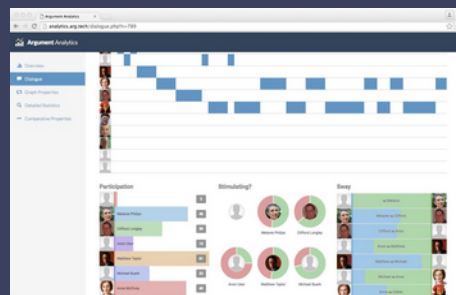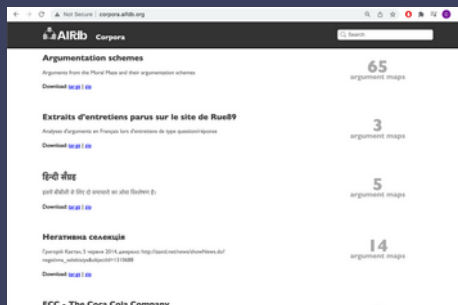$13m research funding (of which 1/3 in the intelligence sector), largest research group in the area

Work with Ministry of Defence, IARPA, & governments; partners including IBM, the BBC & the UN

Understanding IC product

Argument analysis &
visualisation tools:
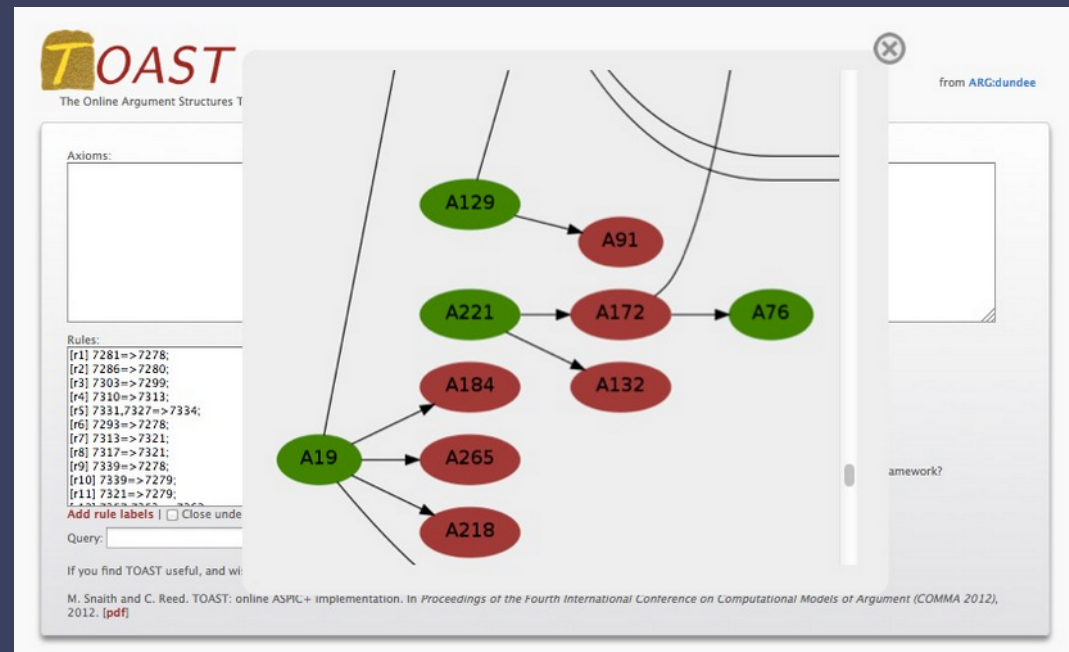OVA, Analysis Wall,
ArgNav, ACHNav

Representational standards:
AIF (AIF+, xAIF)

Data curation:
AIFdb, largest extant
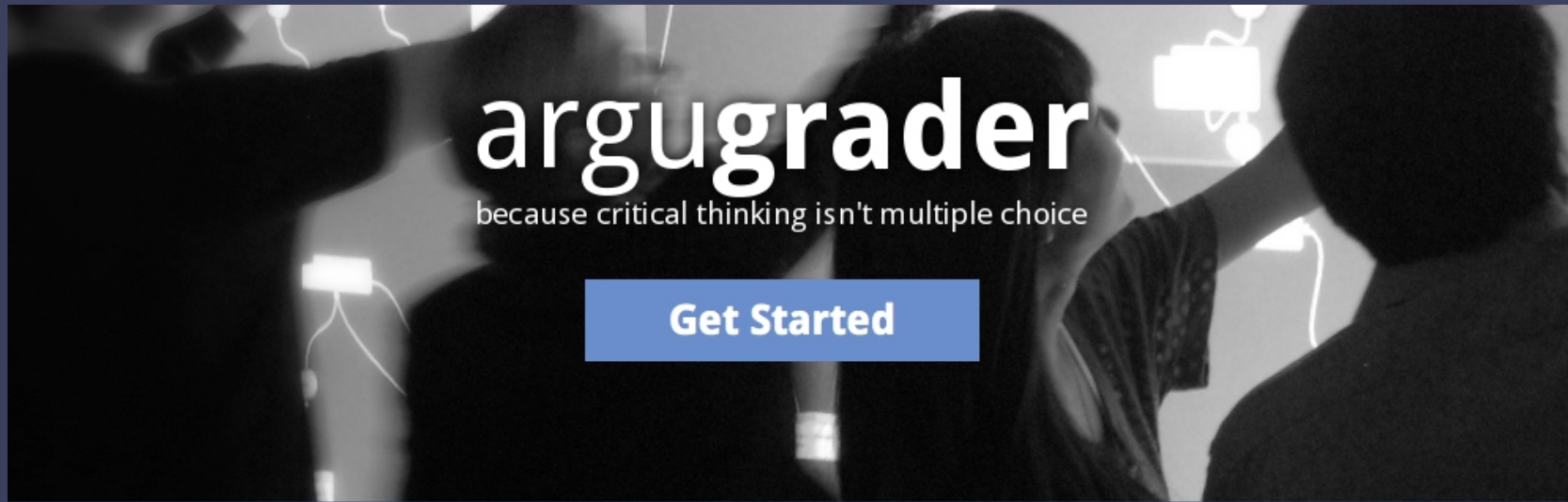datasets of analysed
argumentation

Evaluating Coherence in Reasoning

From
Natural language
arguments
 to
Structured networks
 to
Abstract frameworks

which can then be evaluated using one of a library of
argumentation semantics (first implemented in our
TOAST web service)

Evaluating Structure of Reasoning
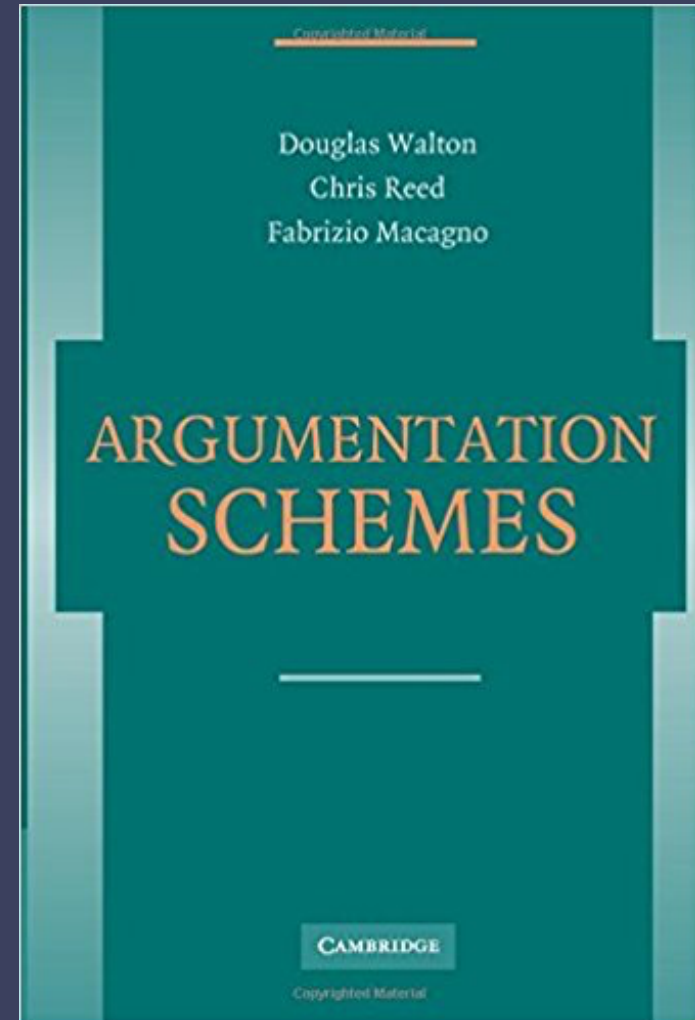
Evaluating Structure of Reasoning

Formulating questions

Argumentation schemes capture stereotypical patterns of reasoning

They are associated with critical questions that point to critiques and to assumptions

Identify the scheme, identify the questions

Engineered in a web service: Skeptic

Copyrighted Material

Douglas Walton
Chris Reed
Fabrizio Macagno

ARGUMENTATION
SCHEMES

CAMBRIDGE

Copyrighted Material

Automating Critique

Commissioned by the BBC to help schoolchildren identify fake news

Argument mining to identify argument structure in news

Argumentation schemes to pose critical questions to users

Deployed into every school in the UK

Iterative Improvement

Discovering Evidence
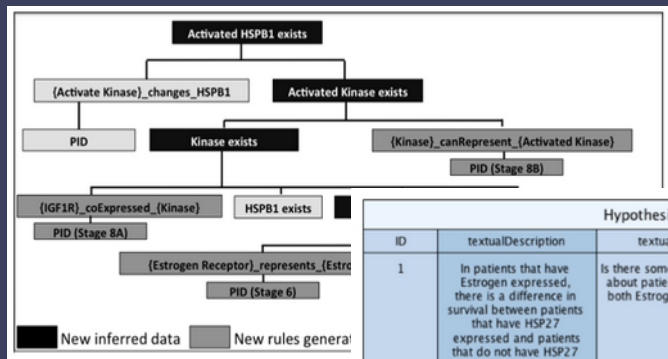
Intertextuality is an exciting new frontier in NLP

When might two documents be talking about the same thing?

Identifying *Intertextual Correspondence*

Early results from US2016

Formulating Hypotheses

From new evidence, new hypotheses can be formed

In cancer genetics, argument-based reasoning identified gaps in evidence

From which hypotheses were formed
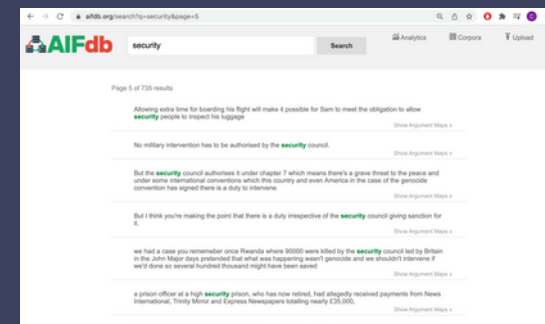
and tested

and published

Concluding Remarks

Find out more at
www.arg.tech

Stephen Fry explains
argument technology
arg.tech/fry

Explore our datasets
at aifdb.org

chris@arg.tech

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Centre for Argument Technology

University
of Dundee