

# Summarizing Qualitative Academic Research

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# Introduction

LLM as a tool for research and writing

Existing focus on STEM

Task: Summarizing qualitative social science and humanities articles



## The Problem

Length: <5,000 words in STEM vs. 10,000+ in social sciences/humanities

The discursive style



## Applications

Learning tool (especially ESL)

Step towards generating literature reviews

# The Data





## What Was Needed

- Full text articles with matching abstracts
  - CORE
- Information to filter down to fields of interest
  - CrossRef



## CrossRef Subjects

- General Social Sciences
- Literature and Literary Theory
- History
- Sociology and Political Science
- Cultural Studies
- Philosophy
- Arts and Humanities
- Gender Studies
- Urban Studies
- Political Science and International Relations

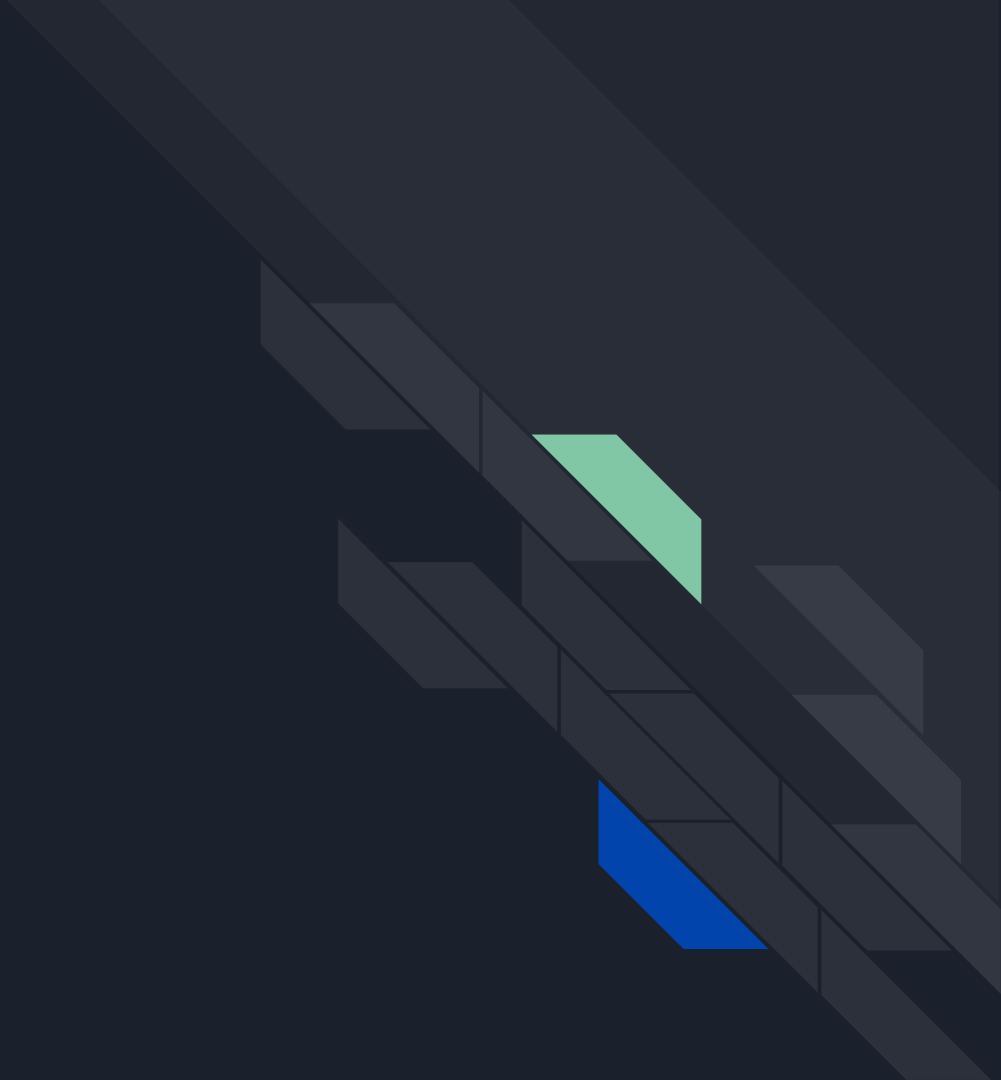


## Data Wrangling

- Using only published articles
- Dropping records without full abstract (90+ words)
- Removing abstract from start of full text
- 7,500 training records, 2,000 test records, truncated to 16,384 tokens



# The Model





## Pre-Trained Model

Long T5: ~250,000 parameter models

Two variant attention mechanisms:

1. Local
2. Transient Global

Guo, M., Ainslie, J., Uthus, D., Ontañón, S., Ni, J., Sung, Y.-H., & Yang, Y. (2022). LongT5: Efficient Text-To-Text Transformer for Long Sequences. Findings of the Association for Computational Linguistics: NAACL 2022, 724–736. <https://aclanthology.org/2022.findings-naacl.55>



## Fine-Tuning

- Single GPU GCE VM
- ~50,000 training iterations
- Hugging Face Transformers API



## Results: ROUGE Scores on Test Data

Model	Rouge1	Rouge2	RougeL	RougeL Sum
BigBirdPegasus (arXiv)	22.1	2.6	15.7	15.7
LSG (arXiv)	33.4	14.1	21.5	23.4
Baseline: Local	1.1	0.0	0.8	0.8
Baseline: Transient Global	28.9	6.8	14.8	14.8
Tuned: Local	40.1	19.0	28.0	28.0
Tuned: Transient Global	49.1	26.0	33.4	33.4



# An example: local attention

## Original abstract:

In this article I address two objections to Rawls' account of international toleration. The first claims that the idea of a decent people does not cohere with Rawls' understanding of reasonable pluralism and sanctions the oppressive use of state power. The second argues that liberal peoples would agree to a more expansive set of principles in the first original position of Law of Peoples. Contra the first I argue that it does not properly distinguish between the use of state power aimed at curtailing difference and the oppressive use of state power. Contra the second I argue that transposing a liberal egalitarian set of principles in Law of Peoples would entail the unnecessary duplication of entitlements within different levels of governance and affect liberal peoples' self-determination. The article also highlights how these criticisms are premised on the assumption that all societies should be liberal and that the correct view of global justice is a cosmopolitan one.

## Generated summary:

This paper argues that the alleged inconsistency between Rawls' domestic and international theories of justice is premised on eliding the distinction between the oppressive use of state power and the use of state power aimed at curtailing difference. Drawing on the alleged inconsistency between Rawls' domestic and international theories of justice, we argue that the alleged inconsistency between Rawls' domestic and international theories of justice is premised on eliding the distinction between the oppressive use of state power and the use of state power aimed at curtailing difference.



# An example: transient global attention

## Original abstract:

In this article I address two objections to Rawls' account of international toleration. The first claims that the idea of a decent people does not cohere with Rawls' understanding of reasonable pluralism and sanctions the oppressive use of state power. The second argues that liberal peoples would agree to a more expansive set of principles in the first original position of Law of Peoples. Contra the first I argue that it does not properly distinguish between the use of state power aimed at curtailing difference and the oppressive use of state power. Contra the second I argue that transposing a liberal egalitarian set of principles in Law of Peoples would entail the unnecessary duplication of entitlements within different levels of governance and affect liberal peoples' self-determination. The article also highlights how these criticisms are premised on the assumption that all societies should be liberal and that the correct view of global justice is a cosmopolitan one.

## Generated summary:

This paper argues that the Rawlsian account of international toleration is inconsistent from a liberal cosmopolitan standpoint. The first part of the paper addresses the apparent tension between decent hierarchical peoples and Rawls' understanding of reasonable pluralism. The second part of the paper addresses the core of this worry. According to many liberal cosmopolitans, liberal peoples should agree to a different and more expansive set of principles in the first international original position of LP: representatives of liberal peoples agreeing on a conception of international justice would include a more substantive set of human rights and some form of egalitarian distributive principle (see Pogge 2006; 2004; 2001; 1994; Beitz 2000). This would automatically exclude decent peoples from the scope of toleration as they would clearly be unable to respect, for the right reasons, a law of peoples which would require all societies to be internally liberal.



## Conclusion

Demonstrating what is possible with relatively little fine tuning

Several thousand examples and a few dozen hours on a single GPU

Next step: summarizing texts in relation to each other