



Governing People's Values in Multimodal Generative AI Models with Democratic Platform

Tanusree Sharma

Assistant Professor, Penn State University

Co-authors: Yujin Potter, Yun Huang, Dawn Song, Yang Wang





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Multimodal LLMs can process and generate **multiple** types of data simultaneously, such as **text, images, and sounds.**



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Images

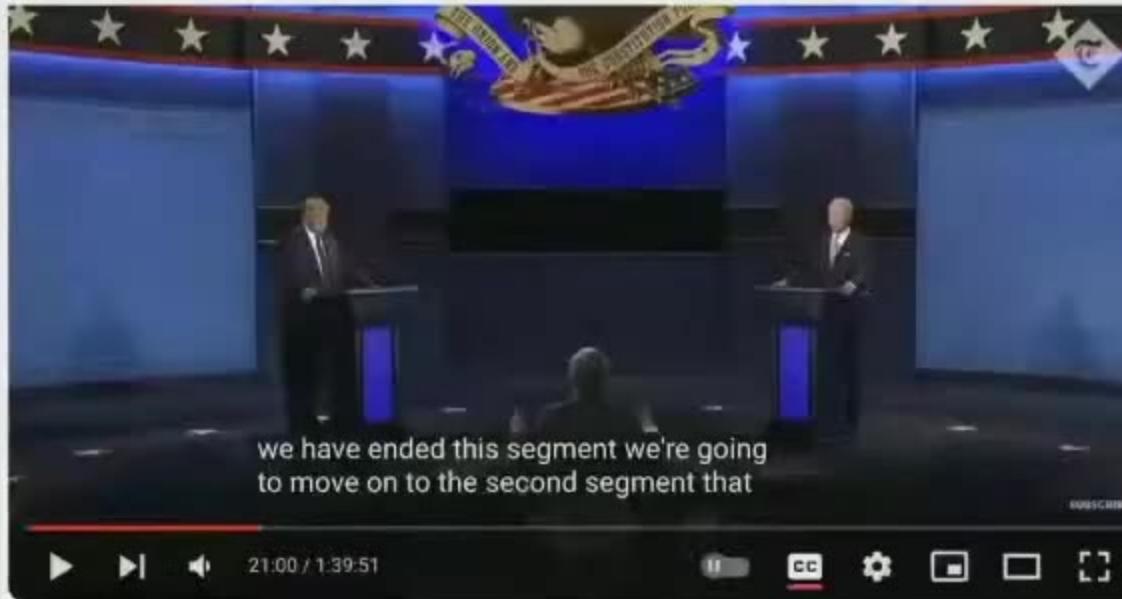


Audio



Closed Caption

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Images



Audio



Closed Caption

First presidential debate in full: Trump vs Biden | US Election 2020

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Verizon Event ...



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Let's examine the captions:

The closed captions from the video indicate that the discussion primarily revolves around significant political issues, specifically health care policies in the United States:

Supreme Court Case on Obamacare: The discussion begins with mentioning a Supreme Court case happening a week after an election, focusing on the Trump administration and several state attorneys general's attempts to overturn Obamacare.

Health Care Plans: The dialogue moves on to address the lack of a comprehensive health care plan to replace Obamacare, despite promises made over the past four years.

Debate Over Replacement of Obamacare: There's a back-and-forth about whether a replacement plan for Obamacare has been introduced, with a speaker giving another an opportunity to clarify their position.

This summary suggests that the video captures a debate segment where the key topic is the future of the Affordable Care Act (Obamacare), a pivotal issue in American politics, particularly during election times. The discussion includes challenges to the existing law, promises of new plans, and the legal implications of potential repeals. This topic is highly relevant in contexts involving presidential debates or policy discussions.

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ARTIFICIAL INTELLIGENCE

All language models are rife with different political biases

New research explains you'll get more right- or left-wing answers, depending on which AI model you ask.

By Melissa Heikkilä

August 7, 2023





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Election '24

COMMENTARY

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Monday, May 8, 2023



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LLM Models to be neutral and unbiased in political Topic

What does it mean by neutral / unbiased?



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What does it mean by neutral / unbiased?

01

Factual Details of the
political debate

02

Subjective details of the political
debate

03

Objective details of the
political debate



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3 folds experiment with experts and users

01



What are the **critical factors** to design LLM model outputs for contentious topic (e.g. political)?

01

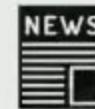
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Contextual
Inquiry



Journalist, Media
Scholars (n = 12)



Current Practice: Multiple
data handling in news/media
generation

Expert Interpretation of
political video

Judgement on LLM response
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Baseline human
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Key factors consideration in
contentious video
interpretation

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Contextual
Inquiry



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- ✓ Baseline human output
- ✓ Key factors consideration in contentious video interpretation



Fact-
Checking



Experts-in-
the-Loop



Positionality,
Selective Exposure

02

What are people's **values** and **expectations** of how LLM models should balance different opinion on contentious topic (e.g. political)?

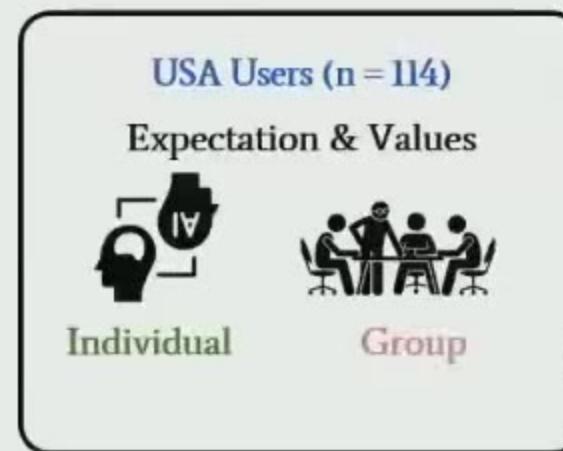


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Deliberation



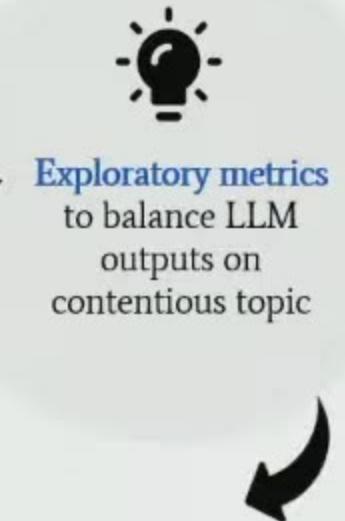
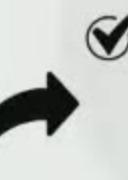
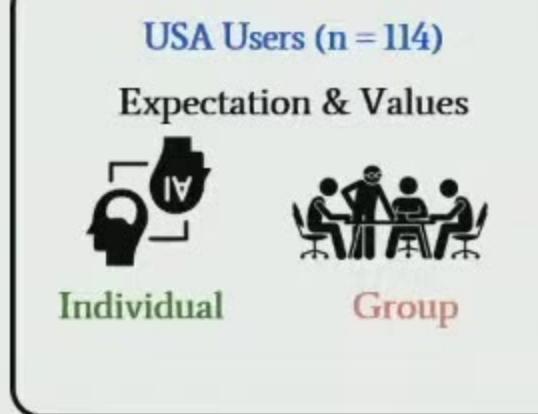
Exploratory metrics
to balance LLM
outputs on
contentious topic

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Deliberation



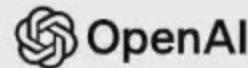
■ Emotion of Speaker
(**Visual interpretation**
of the image frames of
political video)

Objectivity of situation
(**Accuracy of discussed**
topic from audio data)

■ Fact Checking
Balancing Multiple
Political Ideologies

03

How do we **engage** users at scale to ensure that LLM model decisions on contentious topics are made in democratic manner?



Research ▾ API ▾



Blog

Democratic inputs to AI

NSF News

**Democratizing the future of AI R&D:
NSF to launch National AI Research
Resource pilot**

January 24, 2024

Democratizing AI is to decide what rules AI systems should follow, within the bounds defined by the law and how AI behaves should be shaped by diverse perspectives reflecting the public interest.

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[Inclusive.AI](#)



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Current Problem

Video interpretation
by LLM on Political
Topic



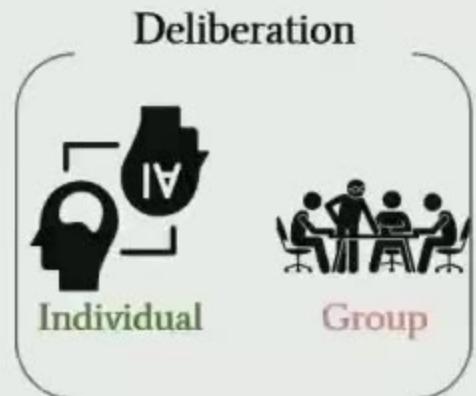
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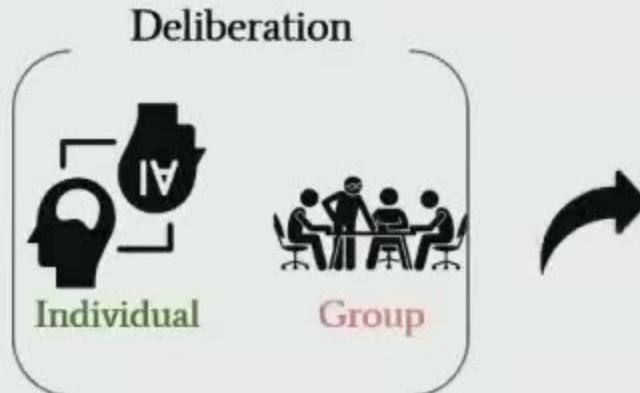


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Decision Making

Chat with AI Discuss with Others

[Proposal: Update Current Multi-modal Model for AI]

Objective: To improve AI model, such as multimodal Large Language Models (LLMs), like OpenAI's ChatGPT that can process and generate outputs across multiple types of data such as text, images, and potentially video based on users request, we want to find ways to make these AI models generate high-quality content from.

Example Context: Imagine you asked an AI system to generate a summary of a video and its' close caption using a simple prompt like "this file contains frames of video clips and closed captions. Please describe what is presented in the video". Sometimes, the AI might not offer a comprehensive and accurate understanding of the given video and closed caption that you prefer. We want to improve this.

Please vote on how to update the AI model:

1. **Use the current model as is:** This means that the AI will continue to generate video and caption summarization the way it does now.
2. **Provide more specific facts:** This means that the AI will focus on more specific factual content and allow users to form their own opinions.
3. **Integrate user feedback loop:** This means that the AI will integrate a user feedback loop that allows the AI to utilize user preferences, expectations and ratings to directly improve its responses over time.
4. **Provide analysis of Speakers emotion and sentiment:** This means that the AI will analyze speakers' emotions and sentiments (e.g., anger or excitement) in the video and provide responses that reflect the attitudes and feelings in the video.

Cast your votes! You can vote one time. And must use all votes.

Vote remaining = 100

Use the current model as is	-	0	+
Provide more specific Facts	-	0	+
Integrate user feedback loop	-	0	+
Provide analysis of Speakers emotion and sentiment	-	0	+

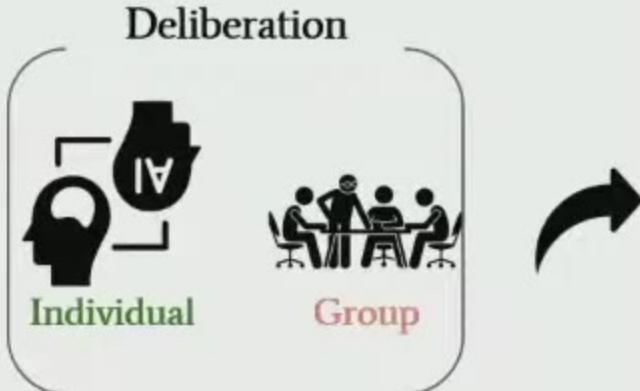
VOTE

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Decision Making

Design Co...
Method, Vo...

Verizon Event ...

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- 0 +

Provide analysis of Speakers emotion and sentiment

- 0 +

VOTE

03

Users Perceived Quality of the Decision-Making Process Being Democratic

The voting process was fair there were equitable discuss and decide genuinely .it was transparent and inclusive. These broad principles are enshrined in key obligations ,rights and freedoms which derive from public views. The voting process showed the importance of other options and they can be of great use.



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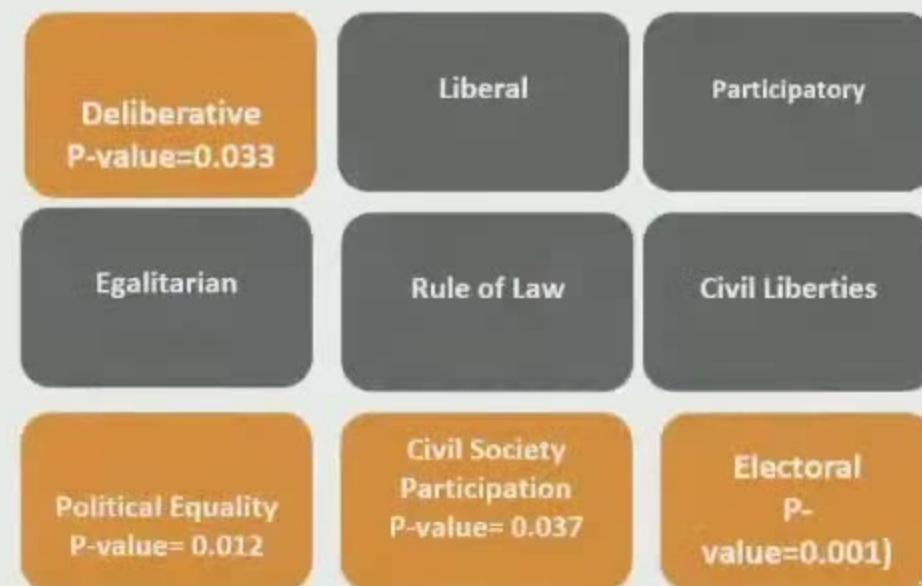
DEMOCRACY REPORT 2024

Democracy Winning and Losing at the Ballot

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Perceived Quality of the governance

Higher Perceived Quality:
Method: Quadratic



Varying Governance Mechanisms

Berkeley
UNIVERSITY OF CALIFORNIA

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Thoughts & Open Questions

- ❖ How do we make sure to include diverse and representative voice?
- ❖ In democratic System for AI, does we need to have delegation?
- ❖ Problem in Sustainability and Keep Engaging People?



OpenAI

How our grant recipients innovated on democratic technology

Key learnings from the grant program so far

Our implementation plans

Report ↗ Contact ↗

Inclusive.AI: Engaging Underserved Populations in Democratic Decision-Making on AI

Report ↗ Blog post ↗ Contact ↗

Research Products Safety Company

into a concise slate that guarantees fair representation using mathematical arguments from social choice theory.

Facilitating decision-making processes related to AI using a platform with decentralized governance mechanisms (e.g., a DAO) that empower underserved groups.

Berkeley
University of California
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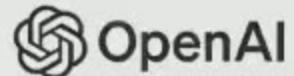
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Berkeley

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Summit on Responsible Decentralized Intelligence
Outcomes of Decentralization and AI

August 6, 2024
Verizon Hall, NYC

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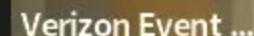
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+

A small rectangular logo in the top right corner featuring a yellow and black abstract design with the text "Verizon Event ..." below it.

Berkeley Center for Responsible
Decentralized Intelligence

Summit on Responsible Decentralized Intelligence — Future of Decentralization and AI

August 6, 2024
Verizon Center, NYC

The official seal of the University of California, Berkeley, which includes the word "Berkeley" in a serif font above "UNIVERSITY OF CALIFORNIA". Below the seal, the text "Powered by Zoom" is written.

Berkeley

Center for
Decentraliz

Verizon Event ...

Session III: Foundations of Decentralized AI (II)

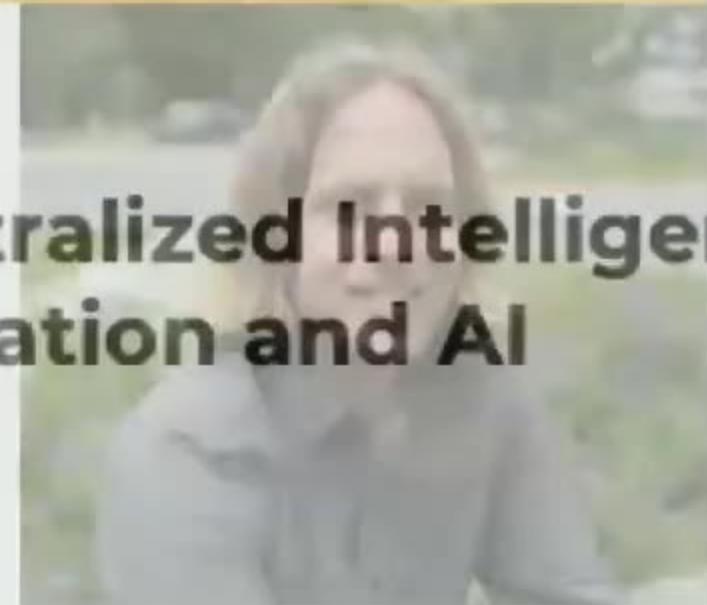
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A Waterlog for Large Language Models **Summit on Responsible Decentralized Intelligence** — Future of Decentralization and AI

Assistant Professor, University of Maryland;
Lead Research Scientist, Aleo Foundation

August 6, 2024

Verizon Center, NYC



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Session III: Foundations of Decentralized AI (II)

A Waterlog for Large Language Models

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Assistant Professor, University of Maryland;
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