Optimizing Tools to Facilitate Deliberation Research

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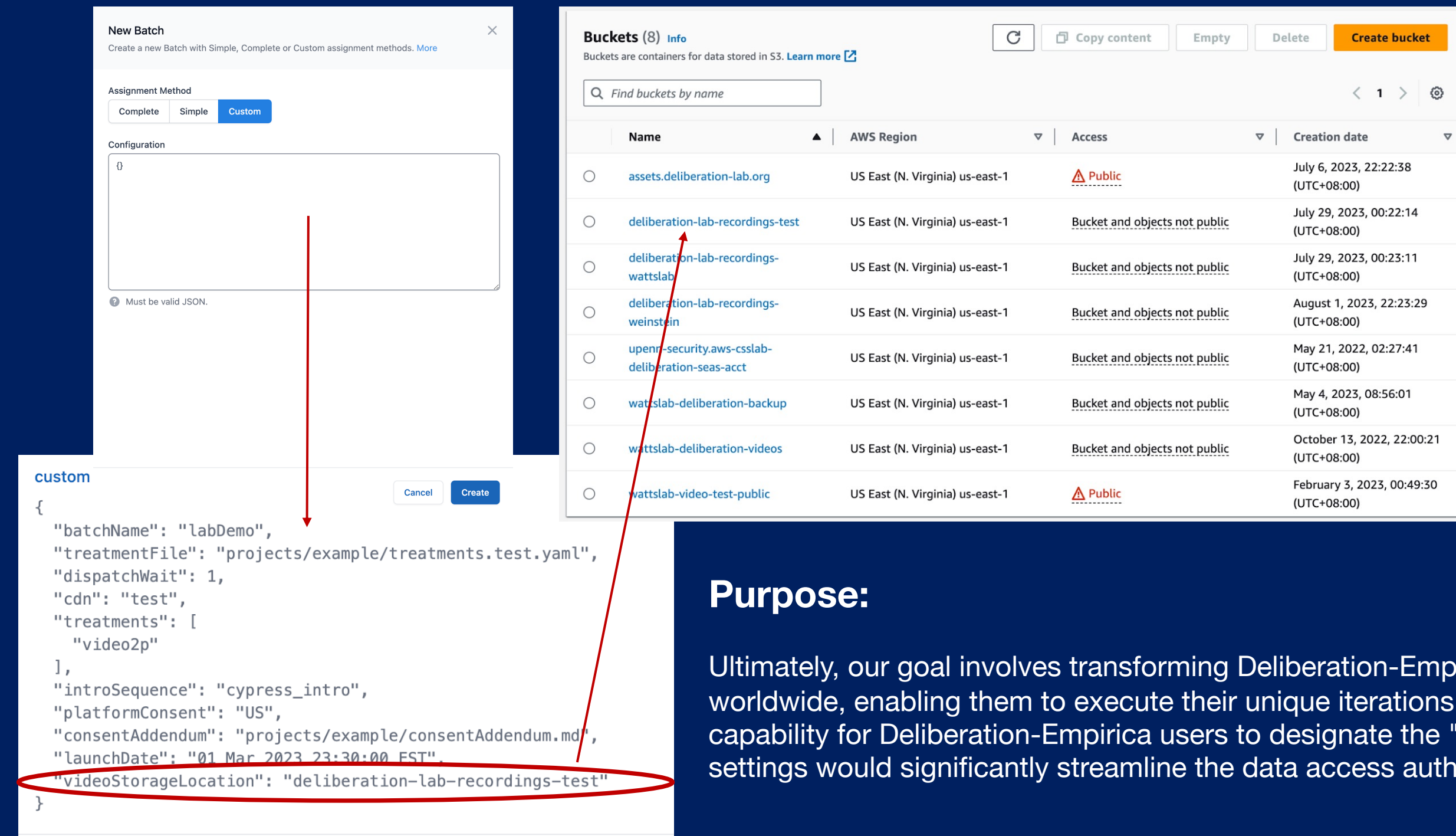Post-Doctoral Fellow: James Houghton (Wharton, SEAS)

Project Overview

Deliberation denotes the collaborative process by which individuals convene to engage in substantive discourse, critically evaluate varied alternatives, and subsequently arrive at determinations. In the CSS Lab, Deliberation-Empirica is an ongoing project; it entails the construction of a digital platform that provides a virtual environment that allows researches on small-group deliberation to be conducted at a larger scale. In contrast to conventional data-gathering methodologies, Deliberation-Empirica affords researchers the capacity to enlist participants, collect multifaceted datasets encompassing dimensions such as political orientations, personality traits, demographic attributes, and more. This platform further facilitates the administration of targeted interventions, the facilitation of synchronous video conferencing, and the deployment of post-discussion surveys. The primary aim of the Deliberation-Empirica project revolves around the development of strategies geared towards ameliorating affective polarization within the context of group deliberations.

Enhancement #1: Video Files Data Saved to Different S3 Buckets

Implementation:

Upon experiment completion, the science data generated is stored within Amazon AWS. Our intention is to mandate users to explicitly define the "videoStorageLocation" parameter (accompanied by error prompts in cases of omission) as a prerequisite for batch creation. Subsequently, we generate a test run to verify the feasibility of saving data to the designated bucket under an identical name. This approach serves a dual purpose: firstly, to preempt situations where a corresponding bucket does not exist, and secondly, to preempt any scenarios where users lack permissions to the designated bucket.

Purpose:

Ultimately, our goal involves transforming Deliberation-Empirica into a platform accessible to researchers worldwide, enabling them to execute their unique iterations of the study. To facilitate this, incorporating the capability for Deliberation-Empirica users to designate the "videoStorageLocation" within the configuration settings would significantly streamline the data access authorization procedure.

Conclusion & Acknowledgement

In addition to these three enhancements, I have played a role in enhancing the Deliberation project by refining the frontend presentation of the application. These enhancements encompass the following: rectifying a bug involving the "moz thumb" with a tilted initial value; introducing randomization to the sequence of survey questions and conducting Cypress testing to validate the randomization process; and making updates to the official deliberation website, which involved an overhaul of the footer section and the incorporation of a partners page.

I hold this opportunity to collaborate with and contribute to the CSS Lab in high regard. Undoubtedly, this experience has contributed significantly to my growth as a researcher, scholar, and collaborative team member. I extend special appreciation to James Houghton for his guidance throughout this journey, his unwavering encouragement, and his pursuit of the highest caliber of work.

Enhancement #2: Log Speaking Time of each Participant

Purpose:

In the realm of deliberation research, a crucial data point to gather would involve quantifying the speaking duration of each participant throughout the discussion. This information holds the potential to shed light on potential disparities in speaking time, offering valuable insights into the impact this imbalance might wield over the decision-making processes of other participants.

Implementation:

Daily functions as the API tool utilized within Deliberation-Empirica, facilitating participant videocalls during experiments. *Daily* monitors changes in the active speaker, referred to as `"active-speaker-change"` within the event listener. When `active-speaker-change` is triggered, relevant data is logged into the `ScienceData` file. They include: `"participant"`, which is the participant id of the active speaker; `"type"`, which is the type is event, in this case the participant starts talking; `"timestamp"`, the amount of time in seconds since the start of the stage when this events happens; and `"method"`, how we detect the change. At the conclusion of all `"speakerEvents"` involving the participant, a `"cumulativeSpeakingTime"` is logged, representing the total duration of their speaking engagement.

Further Improvements:

Given our current lack of insight into the specific criteria underlying *Daily*'s detection of the `"active-speaker-change"` event, the subsequent course of action involves developing an independent method for identifying shifts in active speakers. One potential approach entails establishing our own criteria, such as setting thresholds for sound volume and consistency, which can then be employed to define our unique definition of an active speaker transition.

Enhancement #3: Added Shared Notepad Feature

Purpose:

We aim to provide participants with the chance to express their opinions using text-based communication. Our decision stems from data analysis conducted on prospective research subjects. The analysis revealed a considerably greater inclination among potential participants to engage in research using text-based formats, as opposed to video call formats, which are currently in use. Therefore, by introducing the shared notepad feature, we can expand our reach to a broader cohort of study subjects for the upcoming deliberation experiment.

Implementation:

We are integrating the shared notepad functionality, which involves utilizing API calls to interface with Etherpad, a text collaboration software. The most challenging aspect lies in effectively segregating the frontend and backend components of this feature. While we want to present a textbox on the screens of all participants, we also need to make API calls to the server to retrieve content authored by other participants. Facilitating communication between the frontend and backend is accomplished through the utilization of `callbacks.js`, a file that fetches Etherpad text from the backend server and renders it on the frontend interface. As we proceed, we aim to eventually save all the text, attributing each section to its respective author. However, this particular aspect remains a work in progress.

Considerations:

During the implementation of this feature, a pivotal choice emerged concerning the incorporation of distinct highlighting colors for text contributions originating from various participants. After deliberation, we ultimately opted against this approach. We reasoned that divergent visual cues might inadvertently underscore variations in text input among participants, potentially exerting unintended influence on their behavioral dynamics.

Implemented with etherpad