

Planning for an AI experiment

Fill out this worksheet to articulate success criteria, measures, risks, and benefits for an AI Use Case.

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AI Use Case –					
1. How important are the following considerations for measuring success?	NO importance	LOW importance	MEDIUM importance	HIGH importance	2. How will you monitor or measure the success for considerations of MEDIUM and HIGH importance?
a. Progress on organizational goals (short or long term)		X			
b. Accuracy of data output				X	We measure accuracy of data output by allowing experts within the Geography & Maps Division to test the tool on a research query, then deliver qualitative feedback on the tool's effectiveness in searching for that query.
c. End user feedback or impact				X	Given that the tool is meant for use by researchers of the G&M Division, we benchmark with regard to the end user the same as with in-house researchers, as stated.
d. Time saved or manual burden for staff lifted		X			
e. Lifecycle costs	X				
f. Unbiased results or balanced impacts across data types, classes, or demographics			X		We use CLIP, a model developed and tested by OpenAI researchers, and rely on their published objectives (as articulated in "Learning Transferable Visual Models From Natural Language Supervision") to reduce bias. Additionally, we fine-tune the model on a large dataset selected randomly to reflect the configuration of the G&M collection.
g. Feasibility for (next phase of) implementation			X		We publish and explain all code and methodology for use or fine-tuning of the model by future researchers or implementers.
h. Developing or verifying performance baselines		X			

i. Adherence to quality standards over time		X			
3. Are there other considerations for measuring success not listed above? If so, what are they?					

Risk & Benefit Analysis: The Agency or Department				
<p>4. What are the related goals or priorities this new or enhanced capability could support?</p> <p>Our research question focuses on developing and evaluating a contrastive language-image model capable of feature-based search. Currently, the loc.gov digital catalog is searchable only via metadata, meaning important visual features of an image that are not reflected in the metadata are not searchable. Our proposed search system, which utilizes the contrastive language-image pre-training (CLIP) model, aims to augment the existing search system by encoding each item in the G&M collection according to the model, thereby making these visual features searchable.</p>				
<p>5. Describe potential benefits to the Agency.</p> <p>The agency will be equipped with a new way of searching for items in its own collection, as well as a way to catalog how many or what sort of images adhere to a particular textual or visual input. Additionally, since the agency has access to the source code, they will be able to continually update the collection with future data or fine-tune the model with a desired dataset easily.</p>	Rate potential benefits and risks			
	1 -LOW benefit	2	3 X	4 – HIGH Benefit
<p>6. Describe potential risks to the Agency and how you will mitigate the risks.</p>	1 - HIGH risk	2	3	4 – LOW Risk X

Risk & Benefit Analysis: End Users	
<p>7. How will end users (customers or citizens) interact with the new or enhanced capability?</p> <p>End users will be able to search through the feature search system in addition to the already-existing metadata search system.</p>	
8. Describe potential benefits to end users.	Rate potential benefits and risks

Ability to search across features of interest to research that are not included in metadata.	1 -LOW benefit	2	3 X	4 – HIGH Benefit
9. Describe potential risks to end users and how you will mitigate the risks.	1 - HIGH risk	2	3	4 – LOW Risk

Risk & Benefit Analysis: Staff

10. How will staff interact with the new or enhanced capability?

Staff will interact with the capability in the same way as end-user researchers, with the same benefits therein.

11. Describe potential **benefits** to staff.

Rate potential benefits and risks

1 -LOW benefit	2	3	4 – HIGH Benefit
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12. Describe potential **risks** to staff and how you will mitigate the risks.

1 - HIGH risk	2	3	4 – LOW Risk
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Risk & Benefit Analysis: People depicted in the data

10. How will people represented in the data be depicted by the new or enhanced capability?

There are no people depicted in the data.

11. Describe potential **benefits** to people depicted in data.

Rate potential benefits and risks

There are no people depicted in the data.	1 - LOW Benefit X	2	3	4 – HIGH Benefit
12. Describe potential risks to people depicted in the data and how you will mitigate the risks. There are no people depicted in the data.	1 - HIGH risk	2	3	4 – LOW Risk X

To Add:

Protected Classes:

Accessibility how will you ensure that the results don't have greater negative impact on people with disabilities

Error tolerance – if errors persist over the expected level or get worse, what is the plan?