Accession: A collecting Booth for an AI Museum

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1. The term AI (Artificial Intelligence) is used in place of ML (Machine Learning) throughout to align the critique of this work oppositionally to the hyperbolic claims made for contemporary uses of ML.

Accession is a collecting booth for an imaginary museum whose collection is described and organised by AI.[1] Visitors submit everyday items to the booth where they are photographed and subjected to a number of AI processes which describe and classify the objects submitted. Through the exhibition the digital collection grows but as it does so the AI management becomes more and more selective about what is and is not accepted, rejecting new items that are a poor fit for the collection. Museum collections and AI classifiers rely on maintaining homogeneity. A museum that collected anything would be a dumping ground with no identity, while AIs rely on training sets that have strong visual commonality. Both rely on a sense of sameness but both are subject to critical debates about diversity and representation. Accession explores this relationship by acting out a fictional but plausible scenario through commercially available AI technologies.

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Background

Museums are facing a crisis of profusion (Morgan and Macdonald 2018). An increasingly inclusive view of the materials that constitute culture and thus merit preservation means that human-led means of documenting them seem inadequate to some. Morgan & Macdonald, cite (Harrison 2013; Macdonald 2013) in observing that curators turn to increasingly desperate measures, including 'de-growth' through de-accession or even disposal, to deal with the proliferation of artefacts and the practical challenge of storing and cataloguing them. Some institutions faced with the latter challenge have turned to technologies like Machine Learning to supplant human labour in the description of museum artefacts. Europeana[2], an aggregating service for thousands of European museum catalogues is active in this area convening a task force in 2020 to collate knowledge and issue technical challenges for museums' developers to compete in. Applications elsewhere range from applying image classifiers which automatically tag images of horses, landscapes, or people (to give some examples), develop extended textual descriptions (comparable technology now creates alt-text in Microsoft applications) or establish similarity across or between collections. More experimental, artistic or occasionally playful uses have also been developed such as the Rijksmuseum's attempts to imagine beyond the borders of a Rembrandt painting or Google's tool to search for similar looking faces to one's own in historical portraiture.

As with many other areas of AI application the tools perform well within tightly defined parameters. Identifying dominant colours of images, revealing underpaintings on canvas, or reproducing basic stylistic features to paint somewhat in the style of some artist all produce usable results. In some cases (for instance the creation of alt-text) these applications can transform the accessibility of culture. Other authors (Kaltheuner 2021; Crawford 2021) though have observed how state, financial and military interests have contributed to the use of AI producing social harms. These harms are too lengthy to document here though the authors above describe in detail their production of exclusion, invisibility for marginalised groups (Buolamwini and Gebru 2018), exacerbation of power imbalances, and role in injustices globally. Most notably the assumed capacity of such technologies to effectively predict the future (albeit in a limited sense) by making trained observations of evidence of the past puts great power in developers of such technologies and the structures such as companies or governments who support them. In the domain of museum culture some of these problems pervade. The subject of Accession however is less in the direct production of injustice than in the *world view*, the *rhetorics* so-to-speak of giving over the organisation (through tagging, meta-description, linking and so forth) of culture to machines. All such organisation of culture whether it is conducted by persons within institutional frameworks or by machines has a performative

(Butler 1988; Drucker 2013) effect. Theories of performativity tell us that ongoing iteration forms and reforms the limits of discourse and consequently identity. The limits of what it is possible for AI to say about objects is performed publicly (for instance on museum websites) and consequently shapes the translations of these objects for us, the public. Accession parodies this tendency by taking it to an extreme asking what a museum whose collection is organised and described *only* by AI might look like.

The Installation

Accession takes the form of a small (800*800*600mm) photography booth with two attached screens. Visitors are able to place small items into the booth for accession into the museum. In the work's previous showing these objects included keys, watches, takeaway cups, soft toys, USB pens, and other commonly carried items. Objects are detected automatically using computer vision and are photographed from several angles thanks to a revolving base plate.


Fig. 1. Accession on display at MozFest 2019.
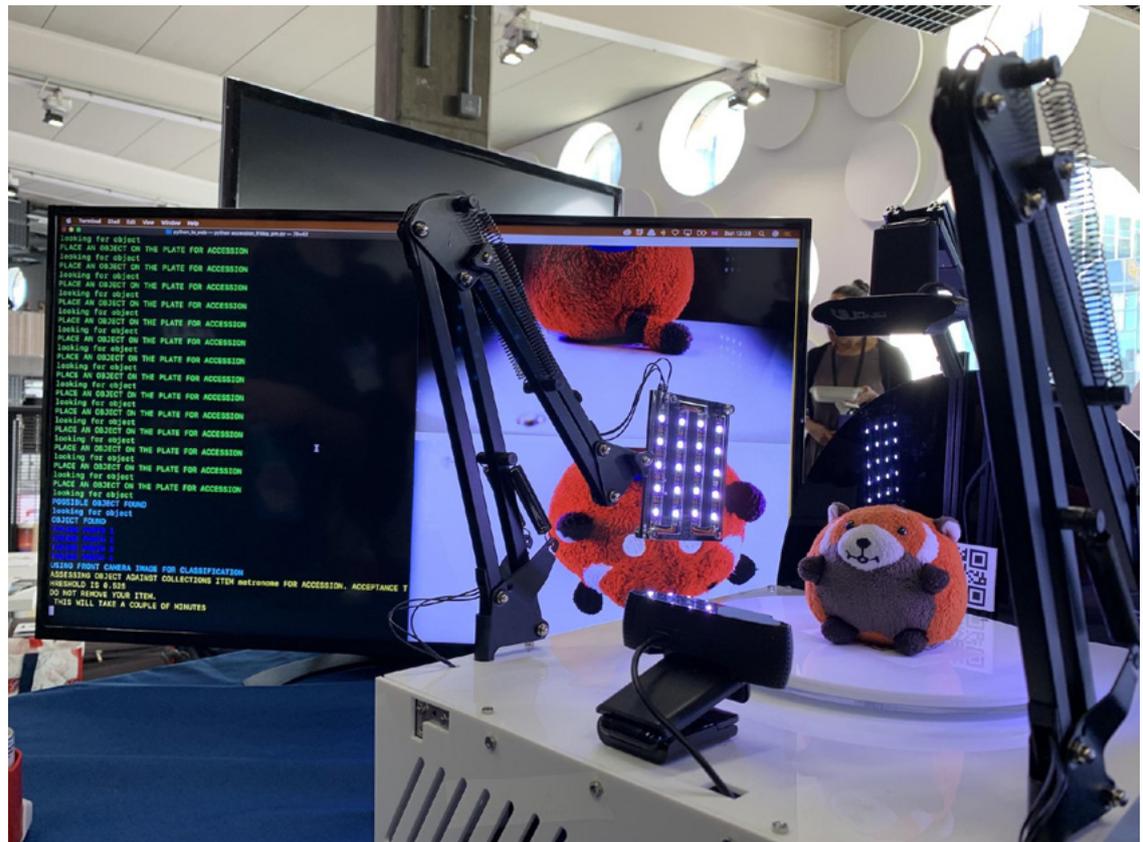
The first screen (see left side of Fig. 1 above) shows an open computer terminal which provides prompts or clues as to the behind-the-scenes activity of the booth. These prompts include phrases such as 'ASSESSING ITEM FOR POSSIBLE ACCESSION', or 'ITEM HAS BEEN REJECTED' thus using the terminal as a UI element.

The second screen displays the growing collection along with the AI generated descriptions, categories, colours and similarity scores for each object. Once the object has been photographed, a background script uses a commercial service (IBM Watson) to generate image classifications, hex colour codes and higher-level class descriptions (such as 'mechanical device') to define archival series. A look-up table provides human readable labels for the colours. Now the metadata for the object is almost complete a final process establishes whether it will be accessioned into the museum. Here a text similarity algorithm (based on tensorflow's sentence encoder[3]) uses the newly created text description as the basis of a comparison with an aggregated text derived from all previously collected objects. If a threshold similarity is achieved, the object is accessioned but the threshold is raised slightly making it more difficult for future objects to join the collection. An example sequence is linked from Fig. 2 below.

3. https://tfhub.dev/google/universal-sentence-encoder-large/3

Fig. 2. Accession in use (https://vimeo.com/468031385).
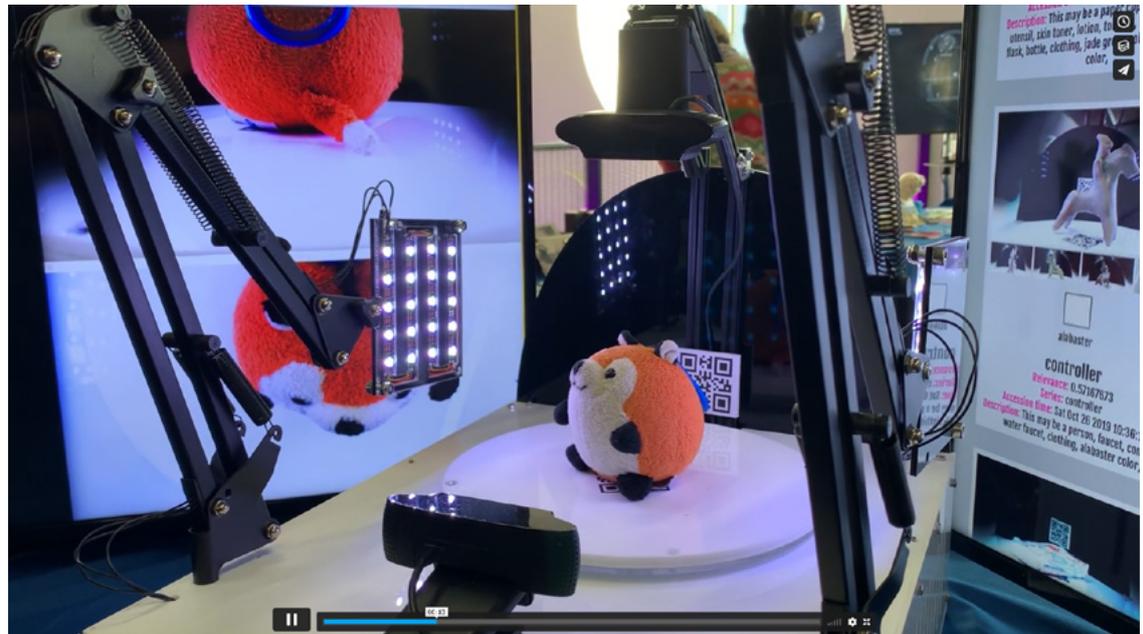
Discussion

Accession's purpose is to both parody the uncritical use of AI within culture and to ask questions about whether any role for it is acceptable within the larger socio-technical apparatuses that constitute contemporary museums. The issues of profusion and hyperabundance in museums are a symptom of broader motivations to democratise access to culture. Museums and academics have for some time wrestled with perceived clashes between curatorial expertise and recognising other knowledges inclusively. Bettivia and Stainforth (2019) employ notions of 'governmentality' from Foucault (2002) in a critique of how Europeana (among others) embodies a set of political ideas in its organisation and presentation of knowledge privileging particular ideas of 'Europeanness'

to the exclusion of others. What is particularly concerning with the inclusion of AI at scale in museums is how particular kinds of knowing (trained, finite, unequivocal) are inscribed in the consumption and production of culture.

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