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## **Guidance on the use of Artificial Intelligence in Grant Applications**

### **Introduction**

We expect all grant applications to Historic Environment Scotland to have a human author; however, we recognise that Artificial Intelligence (AI) can be used to support writing tasks that form part of our application processes. It can be hugely beneficial, in offering time-saving efficiencies, easier to read structures, and more consistent writing styles.

In considering the use of AI to support writing grant applications for us, applicants should be aware of potential pitfalls. The aim of this short guidance is to help our applicants better understand how AI functions, where it may help them in composing applications, and where human composition may be more effective.

We would caution against using AI heavily in your submission to us, as it can produce a weak application.

### **How does AI work?**

The type of AI this guidance document refers to is often referred to as generative AI (GenAI), also known as large language model AI (LLMs). LLMs are so-called because they are fed a huge dataset of text. They take that data and use machine learning techniques to analyse it for patterns. This is referred to as "training".

The most capable LLMs are called generative pretrained transformers (GPTs), which interact with users through chatbots. Once trained, AI can mimic human language ability for both generating new/novel text and for processing existing text based on prompts from a user. This means it can understand and process requests such as "Tell me about Alexander Greek Thomson" or it can re-write existing text in a different style such as "make my email sound more informal." However, it cannot truly understand the context of what it produces, and it is vulnerable to biases that exist in the data it was trained on. At the most basic level, it works as a probability machine - working out what is the next word to use that is most likely correct given the context.

### **Climate Implications of using AI**

There are significant climate implications of heavy AI use in generating applications. A ChatGPT query can use significantly more energy than a Google search: a Google search emits about 0.2 grams of carbon versus around 1 gram to 4.32 grams of carbon for ChatGPT.

Water consumption for AI use is also an issue. Most AI servers are water-cooled. Previously data centres were cooled by air conditioning units, and most still are for the non-AI servers. However, AI uses either graphics card chips or specialised hardware that consume more electricity, creating much more heat that then needs to be removed via a combination of water towers and outside air. ChatGPT currently uses at least 500ml of water for every 10-50 queries, and it is likely that this consumption will increase as more powerful versions become available.

## **Content**

When developing text for your application, you may be tempted to give AI a series of abbreviated facts and ask it to generate text based on it. However, AI has been known to produce 'hallucinations' in generated text, where it adds in additional content that is not part of the original data set. Similarly, it can reference sources that do not actually exist.

It is very important that you check over carefully any text that is generated in this manner, to ensure inaccuracies have not crept in. Anything you include as a fact in an application should be verified/ verifiable via an original or trusted source.

As the applicant, it is your responsibility to make sure all of the content in your application is correct and you will be asked to sign a declaration as part of your submission, stating that all of the content of the application is factual and accurate. You should feel confident this is the case.

## **Project Planning**

If you ask AI to help you draft project outcomes, be aware that it will not have a sense of what is realistic for your specific circumstances – it may be that it is drawing data from a multi-million pound heritage project that is much more ambitious in its scope than your project. Make sure the targets you set for your project relate specifically to the project and you understand how you will be expected to deliver them: we use your outcomes as a key element in assessing your application and monitoring delivery.

## **Text Summarising**

AI is useful for providing summaries of large sections of text. If you're struggling with our word limit, it may help you meet our requirements. However, it may not prioritise the right elements of your project – you may need to check to ensure that the main focus is given due significance in what it produces.

## **Writing Style**

One of the most useful tools in our assessment process is to understand a project in your own voice. Using your own words and composition style helps us better understand the unique nature of your project, and the organisation delivering it.

As AI is trained on sources from multiple authors, the text they produce may end up not sounding like the language the person using it would normally use.

Unfortunately, it is unlikely to be able to replicate your style and tone accurately, as it is designed to provide standardised forms.

When presenting your application for decision-making, we rely on your words to support our recommendation, and it may not be that AI is able to harness the most persuasive language on your behalf.

If you are combining sections of text written by humans and AI, be careful to ensure the language style between the two is as consistent as possible, as this makes it easier to read and assess applications.

## **Language Choice**

AI can revert to American English forms and spelling, that can be jarring to UK readers. While our team do our best to not be influenced by non-UK English language, there may be a level of unconscious bias that is best avoided. Thorough checking in this regard is recommended.

## **Organisational Development**

Writing funding applications can be a useful learning opportunity for newer organisations, as it requires answers to often complex questions: What are our priorities? Where do we see ourselves in five years? Do we really need to do this project? Composing answers to these questions can help organisations come to a consensus on their direction of travel sooner than they would otherwise.

On the other hand, if a set of facts are given to AI to create an answer around, the potential for discussion within the organisation is lost. It is possible that the organisation will then feel less ownership for the project going forward, and be less likely to engage with it fully should problems arise.

## **Conclusions**

AI is a valuable tool for those writing grant applications, and, used properly, can help organisations to create submissions efficiently. However, it is not a substitute for human story-telling, and should be used for supporting, rather than leading on your application writing.

If you have any queries on this guidance, please get in touch: [grants@hes.scot](mailto:grants@hes.scot)