CSAI - Case Study 3 (13 Mar 2025)

In today's case study[1], we will grapple with complex questions regarding the use of generative AI and its environmental impact. We will do so **through the lens of utilitarianism**, which weighs actions by their overall consequences. As you explore this case, consider not only what technology enables us to do, but what is required of us in return. We will start with an interactive session where you will contribute individually followed by a group discussion. Links to the readings are here:

- https://www.technologyreview.com/2023/12/01/1084189/making-an-image-with-generative-ai-uses-as-much-energy-as-charging-your-phone/
- https://oecd.ai/en/wonk/how-much-water-does-ai-consume

The Environmental Impact of Generating Images with AI

Whether for artistic expression, playful experimentation, or professional design, AI tools for image generation have given people new avenues to bring their imaginations to life. But beneath all the fun and games lies an often-overlooked reality—generating images with AI consumes vast amounts of energy and water, contributing to significant carbon emissions and environmental strain. Generating a single image with AI can use as much energy as charging a smartphone. And as millions of users generate countless images—often iterating through many versions to perfect their vision—the collective environmental impact grows exponentially. While much public discourse has focused on the energy demands of training large AI models, researchers have found that day-to-day usage now contributes more to emissions than training itself.

With many image-generation tools offered for free, users face no immediate incentive to limit their usage, but as AI models become larger and more widely adopted, the ethical ramifications become harder to ignore. Are users morally responsible for the hidden environmental toll of their creativity? Do companies have a duty to curtail usage or design more sustainable systems? And how should we balance personal fulfillment against collective environmental harm?

Individual Questions

1. Which people or organizations have a key role to play in the responsible deployment and use of image-generating AI tools?
2. What role do you think *you* personally play in this balance? What is your approach when it comes using image-generating AI tools?
3. If image-generating AI models remained free but added an optional 'low-impact mode' with slower, less resource-intensive processing, would you choose it? Why or why not?

[1] Adapted from: https://www.scu.edu/ethics/focus-areas/internet-ethics/resources/the-environmental-impact-of-generating-images-with-ai-an-ethics-case-study/

Discussion Questions

1. Who are the stakeholders involved—the people and organizations who are directly and indirectly impacted by the development and usage of image-generating AI models?
2. Which people, groups, or organizations should be held accountable for educating the public about the environmental impact of generative AI? Why?
3. Are users morally obligated to educate themselves about the environmental impact of image generation? Why?
4. Would measures such as limiting free usage or implementing usage fees be justified if it reduces overall environmental harm? What other measures you could think of?

Prepare and Submit – Groups in Wooclap

1. I will assign you a team number during class.
2. You can submit multiple answers as a group. Submit one answer per each argument.