BusterBot & The Environment

Understanding AI's impact — and what responsible use looks like

Like most modern technologies, artificial intelligence has an environmental footprint. That conversation matters - but it's equally important to understand where that impact comes from, so we can ask better questions, make responsible choices, and focus on solutions with the greatest positive impact.

Pre-Training the Model

AI Developers (e.g., OpenAI)

A Large Language Model (LLM) is an AI system designed to understand and generate text. It's trained by processing billions of words and learning to predict what comes next, allowing it to recognize language patterns and produce human-like responses.

Pre-training requires large amounts of:

- Electricity to run computers
- Water for cooling systems

Most of an LLM's carbon footprint is created before you ever use it.

Using an LLM

Everyday users (e.g., BusterBot & students)

When you use a tool that is powered by an LLM (BusterBot) each interaction uses a relatively small amount of energy because it's using a pre-trained model. Compared to training, the energy involved in a single LLM query is closer to if not less than common digital activities.

An AI query uses less energy than*:

- A washer cycle
- Streaming
- App & web use

Interactions with BusterBot represent a tiny piece of your digital footprint.

How BusterBot Uses AI

What It Is:

- A text-based assistant that uses a pre-trained Large Language Model
- Built to provide text-only responses, which uses much less energy than AI that processes video, voice, or images
- Designed to keep conversations short and focused, helping students get connected to campus resources quickly while keeping energy use low
- Part of broader efforts to use technology thoughtfully and efficiently

What It Is NOT:

- A source of new large-scale environmental costs
- New model training
- High-energy computing tasks
- Continuous large-scale data processing

How You Can Be Part of Responsible AI

- Use AI tools thoughtfully
- Choose tools designed for efficiency and focus
- Stay curious about how technology works and it's real-world impact
- Share what you learn and help foster more informed conversations around AI