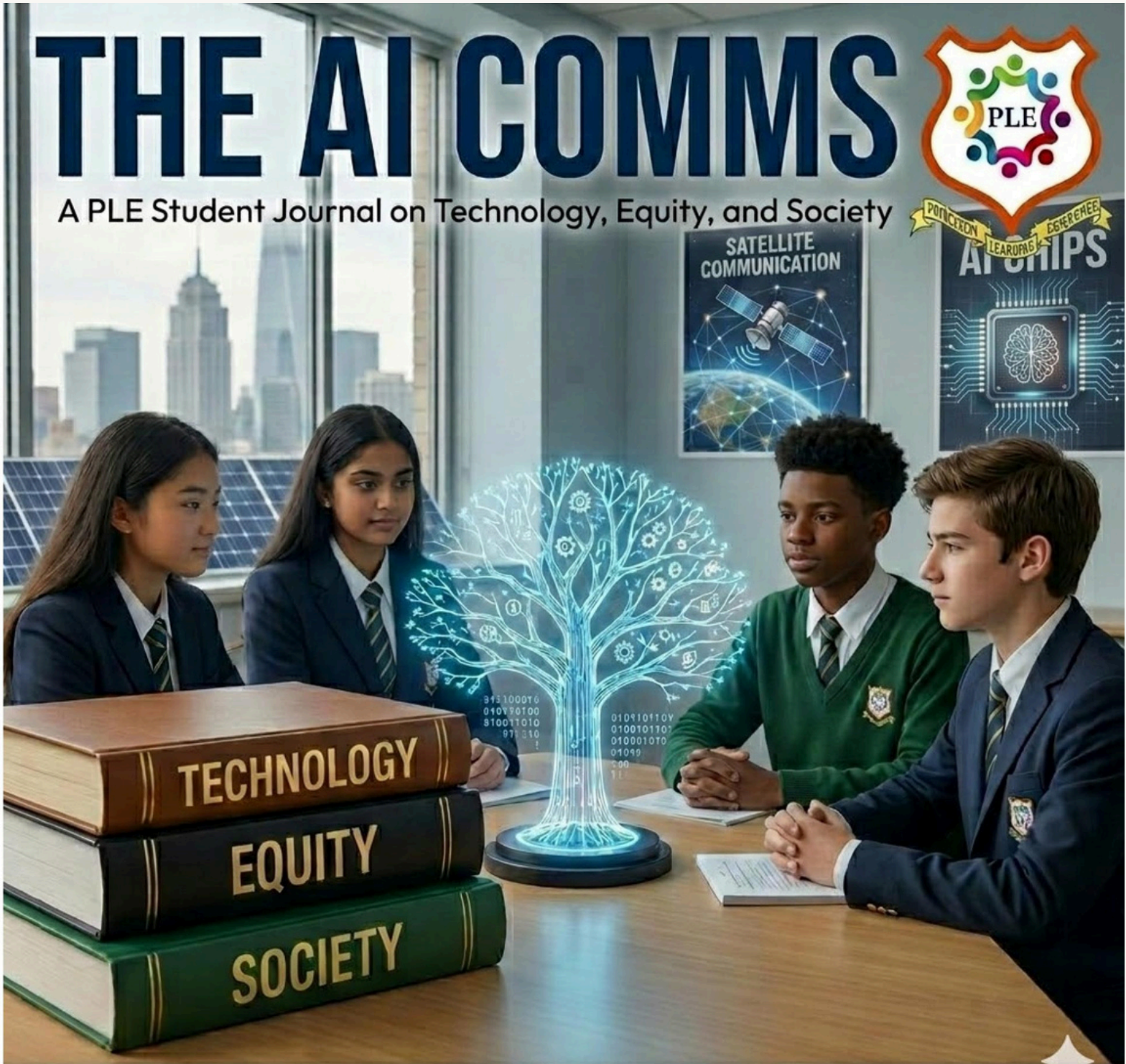


THE AI COMMS

A PLE Student Journal on Technology, Equity, and Society



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THE AI COMMONS

A PLE STUDENT JOURNAL ON TECHNOLOGY, EQUITY, AND SOCIETY

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Our Mission:

To ensure AI serves the common good—creating opportunities for all, protecting our environment, and building a more equitable future where technology empowers rather than divides.

The Cost of the Click: Evaluating AI's Growing Environmental Footprint

Annie Qi

In 2025, the New York Times posted a 5-minute TikTok video, captioned, "A.I. is no magic trick. It's a new industrial revolution with real environmental costs." The video amassed up to a million views, significantly outperforming the account's previous post, which had received only 20,000 views. This striking engagement gap reflects growing concerns about the environmental consequences caused by artificial intelligence.

For many young people, like myself, it is difficult to ignore these concerns. As a teenager, it often feels like it is my generation's obligation to ensure a thriving, liveable future society. With so much responsibility placed on younger generations, it is easy to be influenced by online videos raising awareness on critical issues — such as videos claiming that artificial intelligence is the cause for the deaths of polar bears. However, how real are these concerns for our ecosystems?

Amid the rapid rise of artificial intelligence, generative AI models such as ChatGPT have emerged as some of the most widely used technologies. Yet, behind their seemingly quick and effortless responses, they contribute the most to the industry's environmental footprint. Just as the New York Times noted in their TikTok post, artificial intelligence is not magic. Large Language Models (LLM) — a type of artificial intelligence programmed to process input and generate human language responses — rely on proliferating data centers to operate its complex computations. Every response generated by LLMs requires immense computing power: models drawn from trillions of parameters, huge memory footprints, and constant parallel processing. To sustain the exponential growth of these systems, data centers consume enormous amounts of freshwater, electricity, and rare minerals.

A study conducted by the Boston Consulting Group stated that if AI was used responsibly for necessary tasks, such as data analysis in disaster zones or in medical scenes, it could help reduce up to 10% of greenhouse gas (GHS) emissions by 2030. However, generative AI is clearly becoming more integrated into everyday life, with users now able to prompt AI models, like Google's Gemini, for simple daily tasks. That is why we must evaluate how much society's developing dependency on artificial intelligence is truly impacting our environments. By 2030, data centers are predicted to emit triple the amount of carbon dioxide annually than if the rise of AI had not happened. In the same time frame, the energy demand from AI data centers is set to quadruple in amount. Ultimately, in four years, artificial intelligence is expected to annually consume roughly the same annual amount of energy that Japan currently does, with only half of that amount likely to be fulfilled by renewable energy.

Alongside the high energy consumption, the massive water footprint of artificial intelligence is draining the global supply of drinkable water. For instance, a conversation of 20-50 questions and answers with OpenAI's ChatGPT (GPT-3) uses up half a liter of fresh water — the standard size of one water bottle. According to Shubham Singh, SEO and Content Head at DemandSage, ChatGPT currently has 900 million weekly active users, reaching up to a billion active users within three years of its launch. Each day in a week, within the 900 million weekly users, ChatGPT consumes up to an estimate of 39.16 million gallons daily, the equivalent to if the entire population of Taiwan flushed their toilet at once.

Such resource consumption has been hitting hard everywhere, and New Jersey is not an exception. There are currently more than 80 data centers in New Jersey with more planned or under construction. Because of recent developments of data centers, New Jersey residents and small businesses have been paying more for electricity. In June 2025, data centers were the most prominent cause for the 20 percent increase in New Jersey electric bills. A typical large data center in New Jersey that operates for AI systems utilizes as much energy as up to 100,000 households, while even larger ones around the US could use 20 times that amount of energy.

The New York Times was right: artificial intelligence is not magic. Behind every flawless line of code and instantaneous answer lies a vast, demanding physical network of steel, water, and power grids. As we look toward a future deeply integrated with generative models, we must ask ourselves how much resource depletion we are willing to accept for the sake of convenience. Ensuring a thriving, livable society requires us to pull back the curtain on tech infrastructure and confront these realities head-on. Only by demanding renewable energy mandates for data centers and using these tools with greater environmental consciousness can we ensure that the next industrial revolution sustains our world rather than draining it.