Nate Ly
natejly@gmail.com
“The Carbon Footprint of Artificial Intelligence” by Keith Kirkpatrick

https://cacm.acm.org/magazines/2023/8/274925-the-carbon-footprint-of-artificial-intelligence/fulltext

What did you know about the topic prior to reading the article
AI has spread to many parts of society and our lives, able to assist humans in certain tasks
Training and building AI models can take a lot of computing power

Taken the belief that AI has no physical form so would assume that it has no impact on the environment

What did you learn from reading the article
The large amount of processing power used to train and run AI needs lots of electricity, and in the production of this electricity, CO_2 is generated, which harms the environment

AI footprint is considered to be under the ICT carbon footprint which is around 2-3%, however others estimate AI to be taking 2-4% of total greenhouse gas emissions

Compression that reduces bit width of parameters in models can reduce both size and energy consumption

Data quantization and pruning allows the removal of redundant parameters and connectors

Distillation trains a smaller model with the knowledge of a larger model to make more efficient models

The more people push AI performance, accuracy, and capabilities, the less they care about efficiency

What would you like to know about the topic

Do the costs of the carbon footprint of AI outweigh the benefits, and if not when will they?

What laws or regulations can we take to reduce the carbon footprint from AI?

How does one track AI carbon footprint?

How do we make AI sustainable?