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Energy Efficient AI Systems: Concepts and Challenges

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Abstract:

This research aims to make Artificial Intelligence (AI) systems more energy-efficient. Our approach includes two main parts: developing a new metric for AI energy use and comparing different programming languages and implementation levels for their energy efficiency.

First, we will create a method to measure how much energy AI systems need. This method will look at the complexity of AI algorithms, the amount of data they handle, and how they use computer hardware. Our goal is to establish a standard way to check and compare the energy consumption of various AI systems.

Second, we will study the influence of code optimality and programming language selection on the energy consumption of various algorithms from the AI domain.

By conducting this research, we aspire to contribute to the development of AI systems that are not only powerful but also environmentally sustainable, aligning technological advancement with ecological responsibility.

Literature:

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