

Quantifying the Carbon Footprint of AI: Challenges and Opportunities in Sustainable Machine Learning



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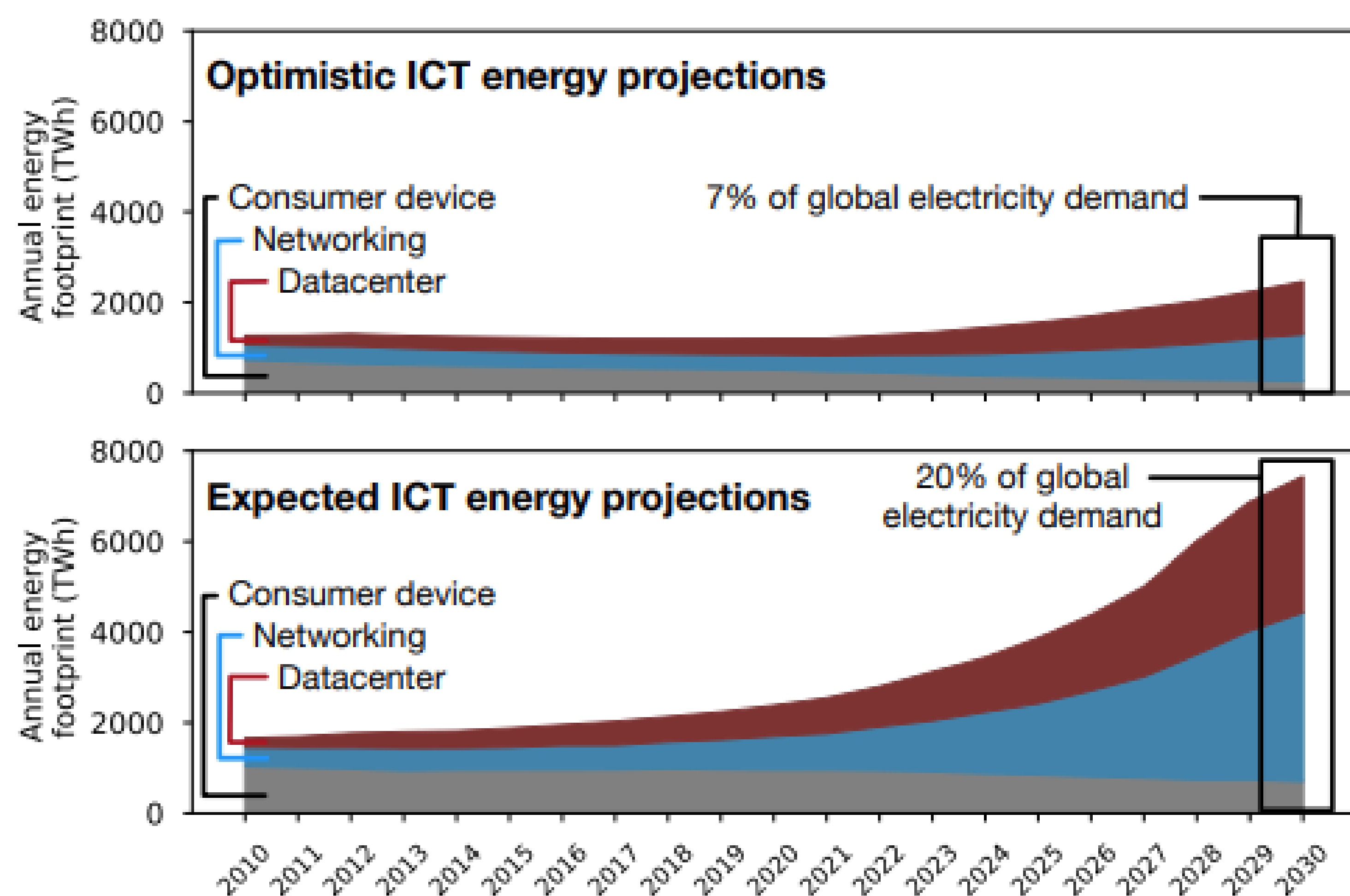
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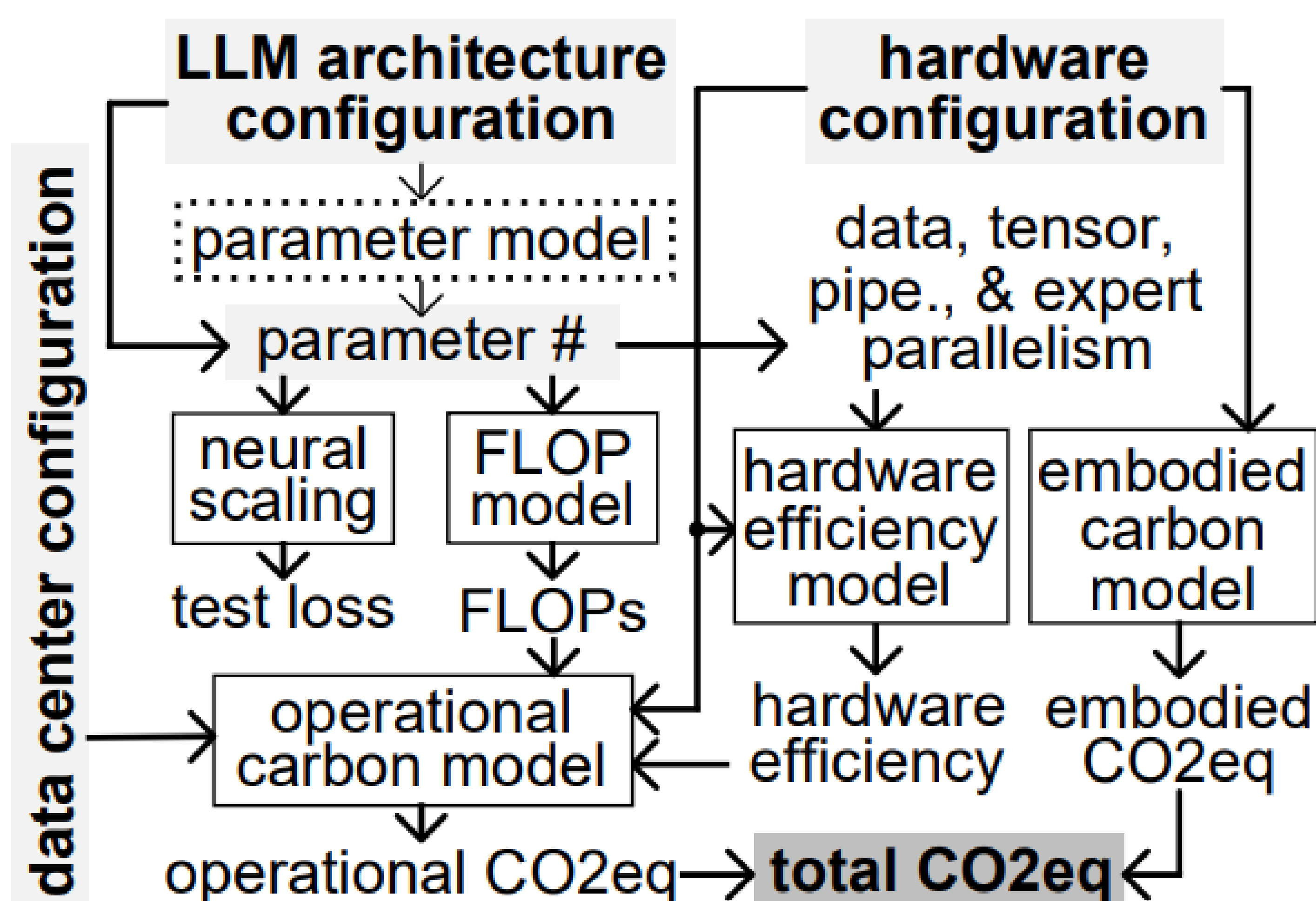
Introduction

Estimated Energy Consumption



Methodology

LLM Carbon Overview



Explanation

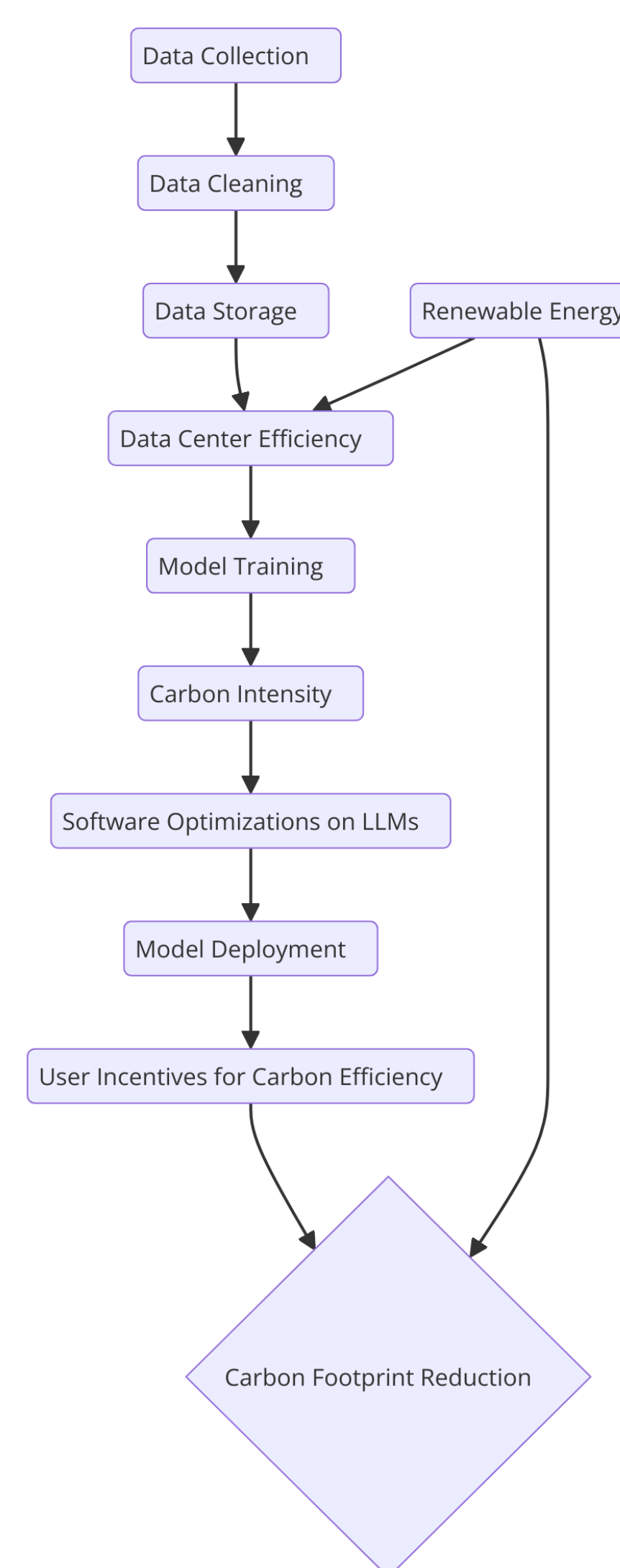


Table 1: The comparison of LLMCarbon against prior work.

scheme	predictive modeling	MoE support	architectural parameters	specialized hardware	operational carbon	embodied carbon
mlco2	✓	✗	✗	✗	✓	✗
others	✗	✗	✗	✗	✓	✓
LLMCarbon	✓	✓	✓	✓	✓	✓

Current Focus

References

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- Faiz, A., Kaneda, S., Wang, R., Osi, R., Sharma, P., Chen, F., & Jiang, L. (2024, January 19). *LlmcCarbon: Modeling the end-to-end carbon footprint of large language models*. arXiv.org. <https://arxiv.org/abs/2309.14393>

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