



PENDING

(IN202311073542)

A method and a system for power consumption prediction of heterogeneous devices using adaptive ai techniques

NEED

Power-hungry processors often lead to thermal instability, battery drain, and performance throttling—especially in multi-device environments. Developers lack foresight on workload impact, leading to 20–30% energy inefficiencies. What if energy use was predictable—before code runs?

TECHNOLOGY OVERVIEW

This invention introduces a machine learning-powered system that forecasts power consumption across CPUs, GPUs, and accelerators. It uses runtime behavior, hardware profiling, and code structure to model energy use. The adaptive design continuously refines forecasts using real data, enabling efficient workload distribution and infrastructure planning.

TECHNOLOGY KEY FEATURES

Supports CPUs, GPUs, accelerators; captures 3-layer features (code, hardware, runtime); generates ML-based power forecasts; includes model selection and feedback loops; reduces guesswork in workload-energy mapping.

[Read more here](#)

MARKET ANALYSIS

The global green computing market is projected to grow at a CAGR of 14.4%, reaching \$35.5B by 2033. India's cloud and HPC markets are key drivers, supported by sustainability mandates. [Sources: Market Research Future 2024, Statista]

Target Industries

Cloud Infrastructure Providers: Optimize resource orchestration. Semiconductor Testing Labs: Evaluate power under multiple workloads. AI/ML Model Developers: Align inference workloads with platform capabilities.

AT A GLANCE

SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation, and Infrastructure), SDG 12 (Responsible Consumption and Production)

Technology is available for licensing/ co-development.

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