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Graphics Energy Profiling System and Method

A new tagging technique using source code tracks application programming interfaces (APIs) to accurately detect and manage energy consumption in software applications, including CPU and GPU usage.

Researchers at Purdue University have developed a new tagging technique with source code to track application programming interfaces (API) in order to detect energy consumption. APIs streamline the computer programming process for creation of operating systems and software applications. These programs are not currently capable of accurately determining user interface or CPU and GPU energy usage, although large amounts of energy are being consumed. Purdue researchers have tagged APIs with source code as an identifier to callback APIs in an asynchronous queue. The source code can be modified to account for energy taken up by APIs. The technology works for both single-layer and multilayer APIs and even helps to track GPU/CPU energy consumption in API callbacks. In testing with a few of the most popular mobile phone operating systems and 10 of the most popular mobile applications, an optimal brightness level usage was achievable using this method.

Advantages:

-Energy efficient

-Enhances user experience

Potential Applications:

-Mobile applications

-Software

TRL: 2

Intellectual Property:

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Category
Energy & Power Systems/Energy Storage

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