Data visualisation page illustrates the power consumption of smartphones

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An infographic developed by University of Helsinki researchers presents the first side-by-side comparison of the power consumption and fragmentation of Android and iOS devices.

The NODES research group at the University of Helsinki's Department of Computer Science has published a live graph comparing the fragmentation and power consumption of Android and iOS devices. The visualisation employs more than two terabytes of data extracted from the Carat application, which has been downloaded onto more than 750,000 devices. The real-time visualisation of huge masses of data is a current research challenge.

The visualisation developed in the Carat project illustrates the statistics on the fragmentation of different Android and iOS platforms as well as the power consumption of the applications. The visualisation identifies energy-intensive applications, as well as applications exhibiting exceptional levels of power consumption on individual devices. The energy-intensive applications tend to connect to the network frequently, put a heavy load on the processor and may contain inefficient code. Applications that use an anomalous amount of power on individual devices, dubbed "energy bugs" in the Carat project, often feature programming mistakes or harmful interactions between the operating system and applications, such as compatibility issues.

The data employed by the researchers included 327,017 installed applications, 8% of which were energy intensive, and 5% were energy

anomalies. Of the studied devices, 48% included at least one application with an anomalously high level of power consumption.

In addition to statistics, the new visualisation offers current information on which operating systems and device models Carat users own. The easy-to-understand bubble chart features the most energy-intensive applications for each platform. All visualisations are updated with the latest data approximately every four days. New visualisations will be developed in the future. The goal is to provide a tool for comparing the energy efficiency of different devices.

More information: The visualisation can be accessed at carat.cs.helsinki.fi/statistics/

Provided by University of Helsinki