Improving battery performance for Android apps

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App developers could see the energy footprint of their programs on smartphone batteries reduced by participating in a program created by a Purdue-related software startup that promises to find an energy optimization plan or provide a money-back guarantee.

Mobile Enerlytics LLC created its App Energy Challenge to pinpoint software coding that results in wasted energy dissipation of mobile apps that run on the Android operating system and remove it on behalf of the creators of the apps. Y. Charlie Hu, CEO and co-founder, said achieving these goals could bring many positive outcomes to app developers and their customers, who could see longer battery life running the optimized apps.

"By removing these energy bottlenecks, application developers can significantly reduce the energy drain of their apps. This could lead to higher app ratings, more downloads, longer battery life and happier customers," said Hu, who is a professor in Purdue's School of Electrical and Computer Engineering. "A single line of code can create an energy hotspot, and sometimes changing the data structure or moving it can drastically reduce the resulting energy drain."

To participate in Mobile Enerlytics' App Energy Challenge, developers send their Android Application Package, or APK, and the typical usage scenarios to the company. Hu and his colleagues will measure the energy drain it would cause on a typical smartphone in the situations provided. The cost to participate in the challenge is $2,000.

"We will give ourselves one month to analyze, inspect and develop an optimization plan for the app that will reduce energy drain by at least 30 percent," Hu said. "After the month has ended, we will send the plan to the developer. We also will offer a free, one-month subscription to eProf, our software that pinpoints the energy hotspots in an app's source code.

"If we can't create a plan that reduces energy drain at least 30 percent, or if the developer can't replicate our findings, we will refund their money in full."

Hu said the eProf software has already benefited Mobile Enerlytics' clients in the app industry.

"Several leading app vendors, who wish to remain anonymous for competitive advantage reasons, have already used eProf to reduce their app battery drain by 60 to 80 percent," he said.

More information: Complete terms and conditions to the challenge are available at mobileenerlytics.com/challenge-terms.php

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