Cider -- a binary compatibility graphics support system for mobile software

The recent explosion in portable consumer electronics has motivated the development of mobile operating systems and software to provide increasingly complex functionality. Unlike conventional CPU computing, where software and hardware development remain relatively separate, mobile computing requires tight integration between software and the operating system/hardware of a particular device. As such, software developed for a particular operating system such as iOS will likely not be compatible with Android devices. Binary compatibility, the ability of software to be reduced to a ubiquitous instruction set for use on any device, is a highly regarded goal within the software development industry, especially for mobile devices. This technology is an operating system compatibility architecture, called Cider, that is capable of running applications developed for different operating systems (iOS or Android) on the same device. Cider has recently been improved to handle graphics interfacing, offering compatibility between device-specific Internet browsers and other graphics-heavy applications.

Cider includes graphics support and allows iOS and Android software to run on the same device

Initial development of Cider was focused on binary compatibility, using compile-time code adaptation and diplomatic functions to support software interaction with foreign APIs and hardware components. Recent advancements enable improved support for graphics management, greatly expanding the number of applications that can be handled by Cider. Graphics compatibility is made possible by Cider's leveraging of the OpenGL ES graphics API, which is used by both the iOS and Android platforms. Cider also enforces continuity between iOS and Android resource management and is capable of mimicking the multithreading capabilities used by iOS on an Android device.

A prototype of Cider has been implemented to run iOS software on an Android platform while increasing overhead by only 8%. Several popular graphics-based applications developed solely for iOS were successfully used on an Android device, including the Safari web browser and iBooks. Use of Android applications on iOS is also currently supported, although overhead costs are slightly higher.
Lead Inventor:

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Applications:

- Cross-platform software compatibility between iOS and Android
- Universal emulator for mobile systems

Advantages:

- Allows for binary compatibility of mobile device software
- Enhanced support for graphics-intensive software
- Simulates multithreading capabilities on Android devices
- Allows native software access to previously restricted APIs
- Requires minimal overhead

Patent Information:

Patent Pending

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Related Publications:


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