Smartphones: Hardware Platform, Emerging Applications, and Education

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Abstract

Smartphones are revolutionizing the way we communicate, work, study, socialize, play, and participate in society. As smartphones continue to evolve with more computing power and bandwidth, with larger display, and with better user interfaces, new apps are merging for each new generation of devices. One key to smartphones' wide adoption is its ability to connect to multiple networks. With their rich connectivity, smartphones have become gateways to the cloud and bridges to the sensor swarm, in addition to the robust connection to other wireless handsets.

The innovations behind these amazing mobile embedded systems, including hardware, OS, communications, and apps, create some unique research and education opportunities. In this talk, I will share some thoughts on these opportunities, as well as discussing future trends and technical challenges of further advancement of smartphones.