

Challenges for Mobile Data Management in the Era of Cloud and Social Computing

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OVERVIEW

The mobile data management community is experiencing a rapid evolutionary change due to the worldwide diffusion of always-on mobile devices and to the increased popularity of location and context-aware mobile applications. Accordingly to recent studies, in two years from now one-fourth of the total mobile data will come from audio and video streaming and nearly all the rest from other Internet services. A large part of the increase in mobile data will come from cloud computing applications that are massively used for storing personal data, for sharing data, as well as for utility software (such as maps) and productivity tools. Social networking will strongly influence the way mobile users choose, share and use content from mobile devices. On the other side mobile devices are changing the way social networks have been used till now introducing geo-tagging, location sharing, and many innovative location-based services.

EXAMPLES OF RESEARCH CHALLENGES

The convergence of mobile, cloud and social computing poses significant technical challenges. Examples include: a) how to effectively manage and query in the cloud the enormous amount of location and trajectory data that large scale mobile applications require; b) how to address the security and privacy issues involved in having those data stored and processed in the cloud, as well as possibly shared in social networks; c) how to design scalable mobile applications for geo-social networks in which resources, users, and possibly relationships are associated with spatio-temporal information. A more general question arises: Is there a new generation of mobile data management solutions needed for the convergence of mobile, cloud and social computing?

THE PANEL

The 2011 MDM panel explores this exciting interdisciplinary topic following the personal perspective of leading scientists of our community. The panelists are both from academic and industrial research institutions, with expertise in different fields of mobile computing including spatial databases, software-as-a-service solutions, mobile databases, mobile data mining, sensor data management, and mobile data privacy. Through interaction with the audience, the panel tries to identify some of the unique research challenges and opportunities in this area.