Towards a Mobile Cloud Computing Framework

Richard Han, Qin Lv, Shivakant Mishra
Department of Computer Science
University of Colorado at Boulder
Proposed Mobile Cloud Services

Cloud-level IaaS
Infrastructural Services

App-level/Web Mobile Framework Services

- Complexity Partitioning Services
- Geo-Computational Services
  - Moving computation closer to mobiles to reduce network latency
- SLA Services – low latency
- Context-Awareness Services
  - Location, mobile sensor suite awareness
  - Context-aware compilation
- Privacy Protection Services
  - Anonymizing location, context
Mobile Cloud Architecture

Today’s Cloud Applications

Cloud Platforms, e.g. Azure

Next-Generation Mobile Applications

Proposed Mobile Cloud Computing Framework

Enhancements to cloud platforms for the mobile cloud
Mobile Cloud Framework Services

Next-gen Context-Aware Mobile Apps

Mobile Context

Web Context

Social Networks

Privacy

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy

Social Networks

Contextual Data Integration and Management

Context Analysis & Data Mining

Context-Aware Recommendation

Privacy
Building an Ecosystem for Context-Aware Mobile Social Networks

Playlist Service e.g. Lastfm

Jukebox

Social Networks e.g. Facebook

Context-aware playlist is a combination of Anne’s and Dave’s favorites.