QuestCrowd: A location-based question answering system with participation incentives

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Background

Scenario

Q: Is there a line at the Colosseum?

A: Here is a photo outside it.

• QuestCrowd enables users to ask either real-time or factual questions tied to a specific location.

Challenges

• Handling of location-based queries
• Promoting participation in the crowd
• Scalability issues with large number of users

Related systems

• localmind
• Aardvark
• SocialTelescope
• Q&A on top of Twitter

QuestCrowd System

Architecture

Participation incentives

• User reputation $R(v)$ updated daily based on the sociogram of user interactions:
  
  $$R(v) = R_{old}(v) + \sum_{w} \text{Weight}(w) \cdot \text{Interaction}(w, v)$$

• Forwarding mechanism that leverages social graph.

• Score decides which questions appear higher in the Feed of user $u$. Key design mechanism that motivates participation and inhibits malicious activities in the system.

$$Score(q, v, w) = [R(v) \cdot P_{resp}(q, w) \cdot Stale(q)]^F$$

Response Probability
Time Elapsed

Android App

Information Sync

This work was supported by the NSF Award No. 1028394.