CrowdZen: Mobile Privacy-Preserving Crowdsourced Data Collection

Joshua Joy (jjoy@cs.ucla.edu), Martin Verde (martinverde.edu@gmail.com), Keshav Tadimeti (ktadimeti@ucla.edu), Tyler Lindberg (tlindberg@ucla.edu), Mario Gerla (gerla@cs.ucla.edu)

UCLA Computer Science

Problem: Privacy-Preserving Real-Time Data Collection

Data owners validate queries before accepting.
2. Data owners privately and anonymously write their location.

Design: Query Fetch

1. Reject query
2. Tired Runnable:
   - Every 5 ms (configurable)
   - Check for queries from trusted analyst
   - Deep each query meet user standards (epoch, data type, etc.)
   - Policy module
   - Store query by epoch in global map for answers

3. Design: Query Response

   - Every 50 ms (configurable)
   - Don't answer query
   - Is a query fetch running?
   - Is the query epoch a multiple of the current iteration?
   - Is the query expired?
   - Enqueue current query for answering
   - Delete query from global map
   - Are there too many answer tasks running?
   - AsyncTask
   - Start new AnswerQuery task for current query
   - Start new AnswerQuery task for top of queue

Contributions: Energy-efficient and Privacy-preserving Mobile Apps

Energy (Watts) 2.177 0.017
Evaluation Period 65.5 hours

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