Privacy in GeoSIM System

-- Ling, Jalal, Nakul, Mihir*

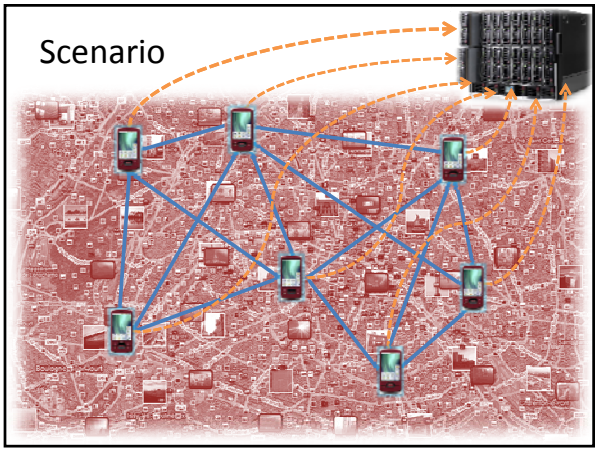
Motivation

- Mobile phones are moving sensors;
- Information collected by mobile phones have great values for commercial and research purpose to improve lives;
- User privacy protection is the most concern;

Mission:

Implement a system with privacy guarantee.

Scenario



Task Breakdown

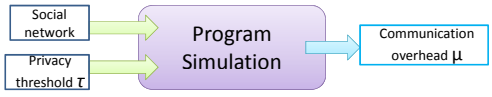
- APP GUI design and friend list manager;
- Photo breakdown at client and merge-up at server;
- P2P comm. and Client-server comm.
- Privacy vs. comm. overhead analysis, attack models;
- Project coordinator;

Tasks -- Nakul

- First milestone: Client side
  - Client-side GUI design;
  - Friend list maintenance without communication;
  - Photo breakdown;
  - Packet encryption;
- Second milestone: Server side
  - Friend list maintenance with communication with server/clients;
  - Server side photo restoration;
  - Camera enabling/Integrated photo taken;

Tasks -- Jalal

- First milestone: find the relationship between privacy threshold vs. comm. cost on different topological networks;



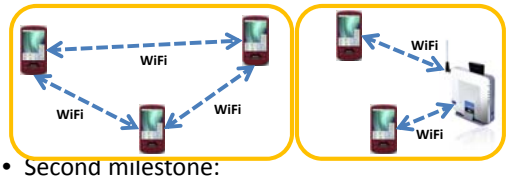
Privacy threshold τ : the probability of the server makes a successful guess on the ownership of a photo;

Communication overhead μ : the average number of hops a photo goes through before reaching the server;

- Second milestone: Attack Model Analysis
  - Server as the adversary;
  - Server and clients conspiracy;

Tasks – Mihir*

- First milestone:
  - P2P communication over Wi-Fi adhoc networks;



- Second milestone:
  - Communication between user and server;
  - Communication with certificates;

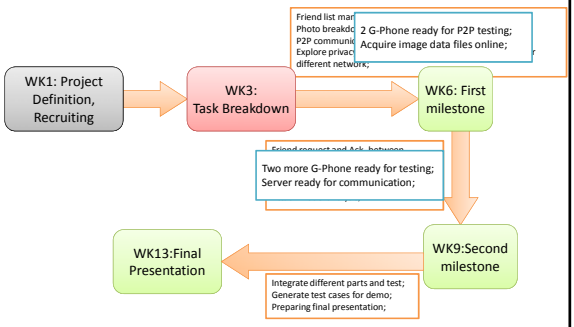
Tasks -- Ling

- Project coordinator: discussion, resources;
- Define interfaces between different parts;
- Tech report write-up;

Milestones and Deliverables

- First milestone 9/28, WK6
  - Unit demo;
  - Privacy threshold vs. comm. overhead model;
- Second milestone 10/22, WK9
  - Unit demo;
- Final Presentation 11/18, WK13
  - Demo;
  - Source codes;
  - Tech report;

Project Timelines



Resources

- Data: download Geo-tagged photo online;
- Hardware: (3-5)G-phones, Server;
- Software: Android SDK, Eclipse;

Thanks & Questions ?