Presentation on

"Search Locations Safely and Accurately: A Location Privacy Protection Algorithm with Accurate Service"

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Presentation Outline

- Introduction
  - Privacy leakage of LSS
- The Solution for Location Privacy
- The Proposed Algorithm
- How Algorithm works
- Success of the Algorithm

Introduction

- We use Location Bases Service (LBS) in our everyday life. User can get service at any time and anywhere. For example, Google map.
- However, location information is consistently sent to service providers without protection when users query Location Base Services (LBSs), allowing providers to collect information from all users.

Privacy leakage of LSS

- The collected information may expose users to customized advertisement
- Location information may be leaked to adversaries with criminal intents.
- Location information even be sold to third parties.

What’s The Solution for Location privacy issue ?

WE introduce an innovative algorithm for the problem. Our algorithm will provide –

- **Accurate LSSs**
- **Location Privacy Protection**
- **Zero Quality Loss**

The proposed algorithm contribution:

- To the best of our knowledge, this is the first algorithm that provides protection for Location Searching Services (LSSs) without quality loss.
- It is the first algorithm that provide accurate services and location privacy protection simultaneously.

How the Algorithms works ???

When users launches an LSS query –

- The proposed algorithm randomly chooses three locations (assisted locations) instead of the real location to query services.
- If queries of assisted locations are successful, the user will get accurate results for the assisted location.

The Success of Proposed Algorithm

Figure (a,b) shows the result for expected privacy and Quality Loss

- As shown Fig (a), when Δ increases, the expected privacy increases exponentially.
- And in Fig(b) shows that, Quality Loss (QL) decreases exponentially as Δ increases.

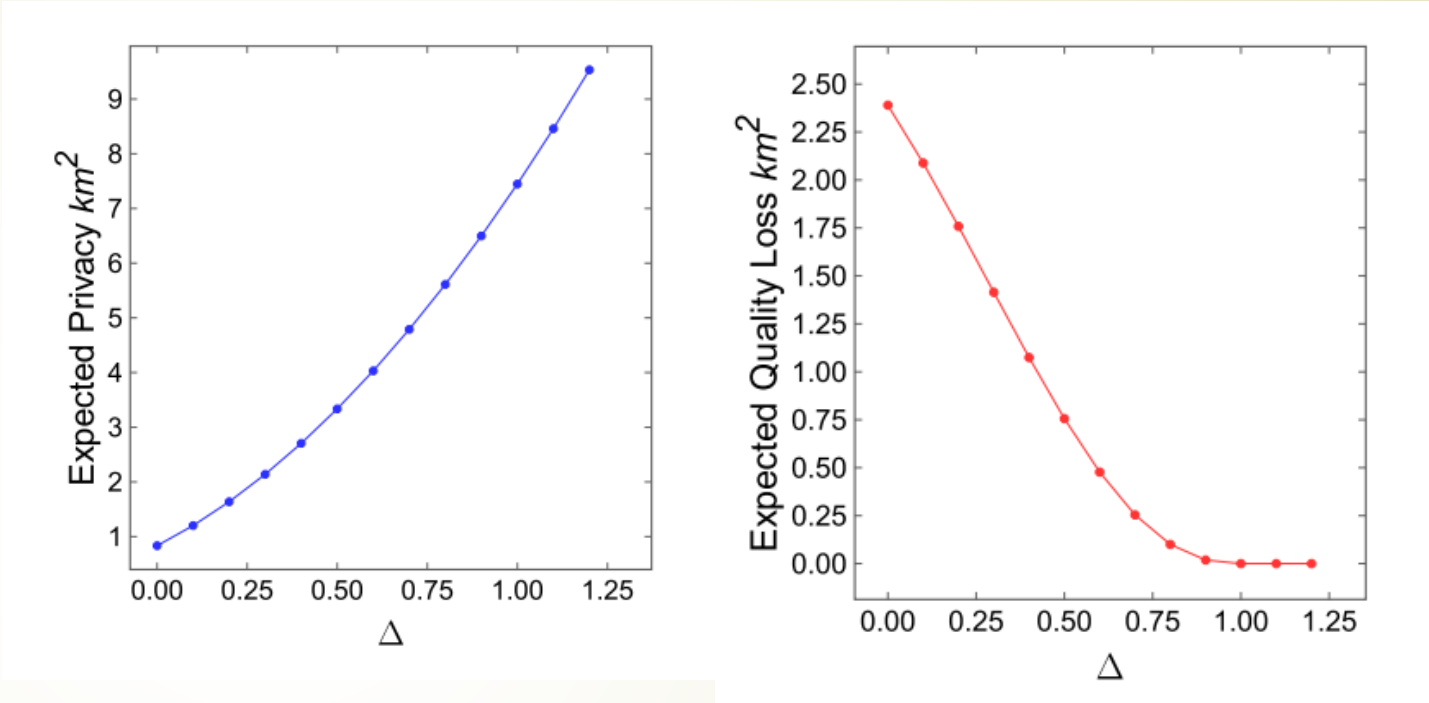

Fig. a

Fig. b

Thank You