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Querying Private Data in Moving-Object Environments

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Non-Anonmyous Applications

- When I enter the CS building, notify my project groupmates
- Send (**identity, location**) to service provider
- User may not want to reveal her location is in a sensitive area e.g., hospital
- **Location privacy** is lost

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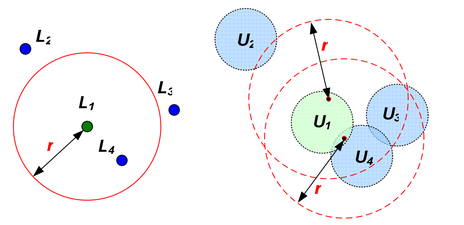
Imprecise Moving Range Queries



Moving Range Query **Imprecise Moving Range Query**

- **Is a probabilistic query for producing inexact answer:** (S_2, 0.1, S_3, 0.5, S_4, 0.9)
- **Quality Score** measures answer ambiguity

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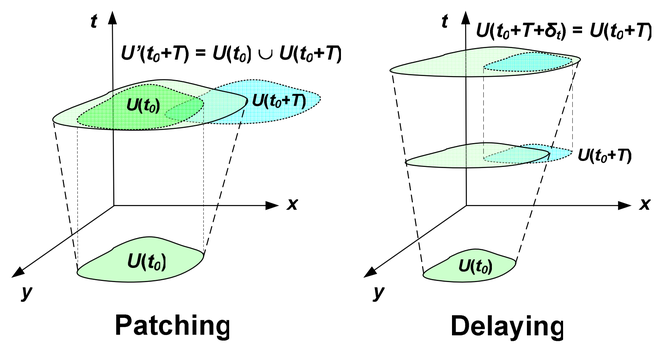
Protecting Linkability



Patching **Delaying**

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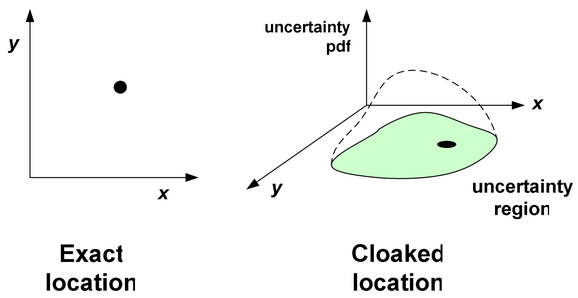
Location Cloaking Model



Exact location **Cloaked location**

Location cloaking = uncertainty region + pdf

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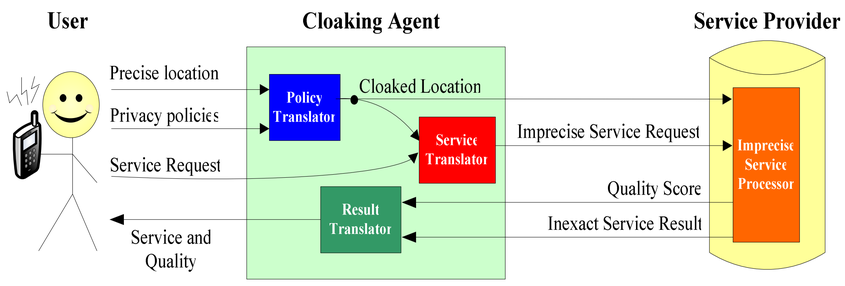
Cloaking Agent



- Capture the trade-off between *uncertainty, service quality and privacy*

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References

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