

Wifi-Reports:

Improving Wireless Network Selection with Collaboration

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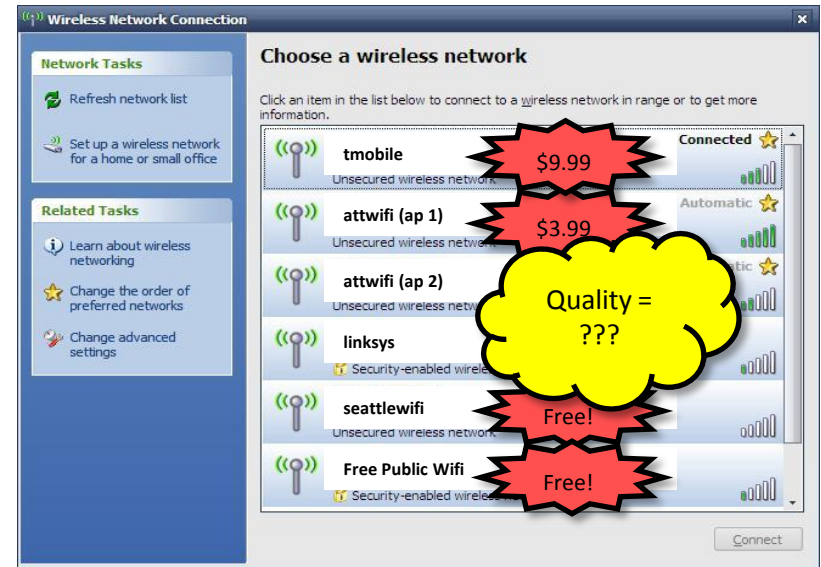
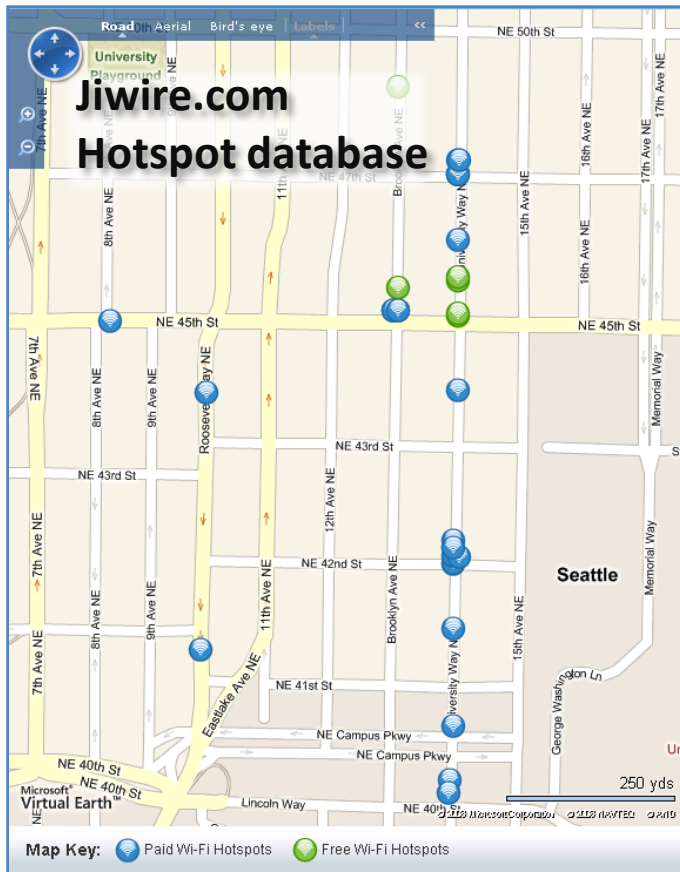
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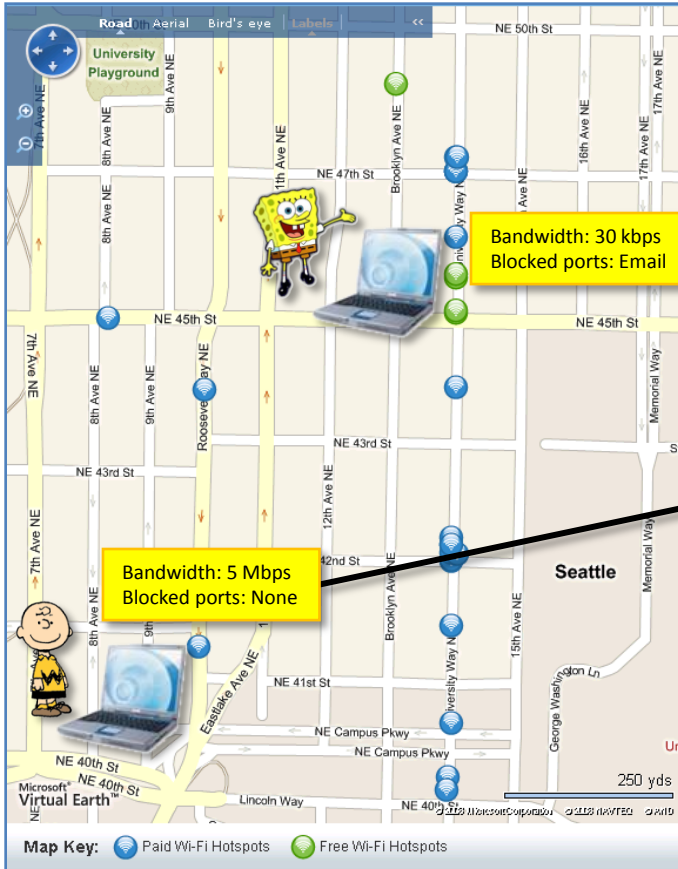
Problem: Commercial AP Selection



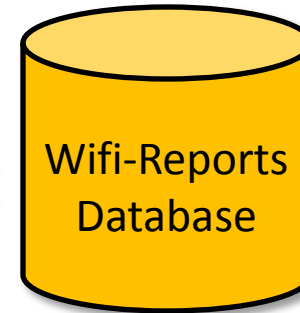
Which networks will run my applications?
Which ones have good performance?

We often have many choices of wireless access points (APs),
but little information about each

Wifi-Reports



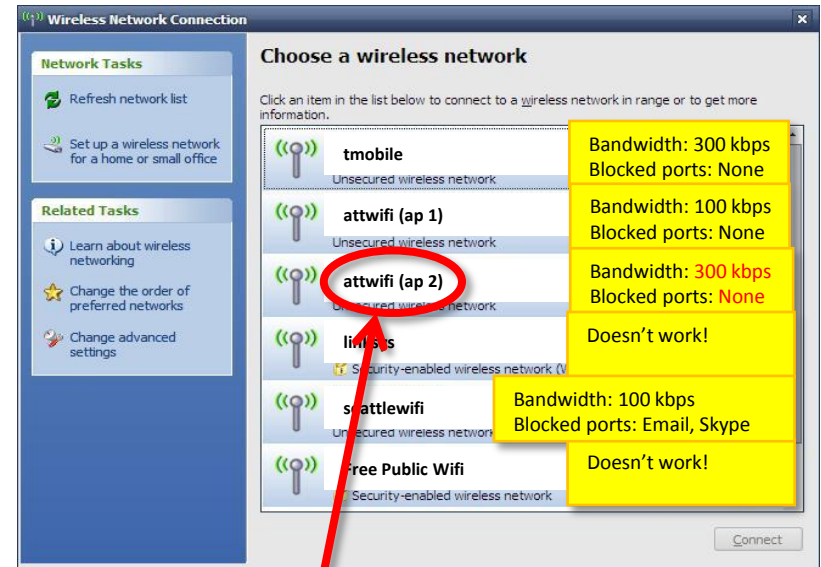
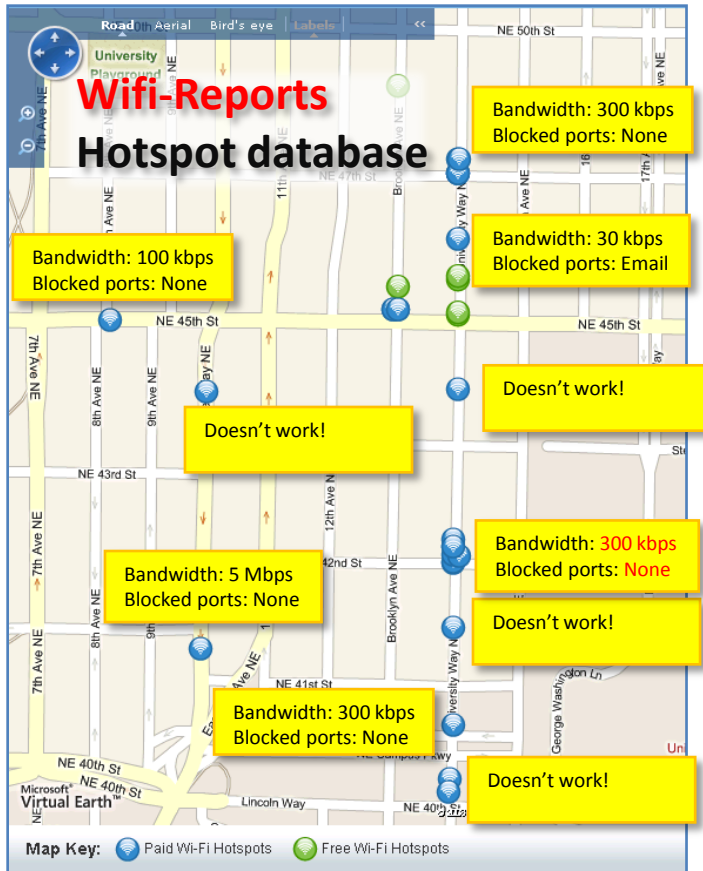
community uploads
measurement reports



members download
summary statistics



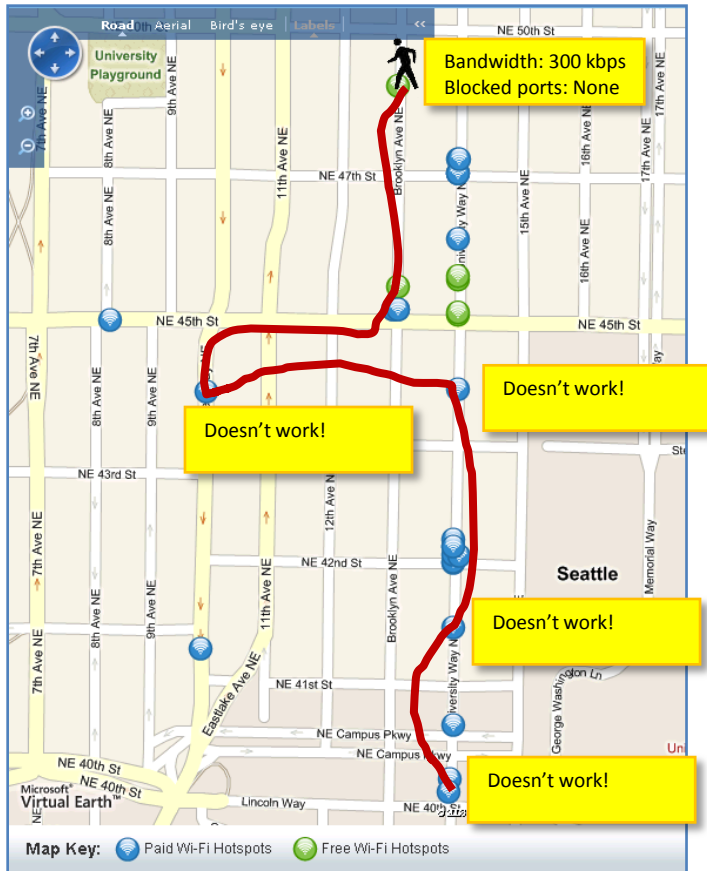
Wifi-Reports



I need to use VoIP so this is the best network for me

Wifi-Reports provides information about AP performance and application support

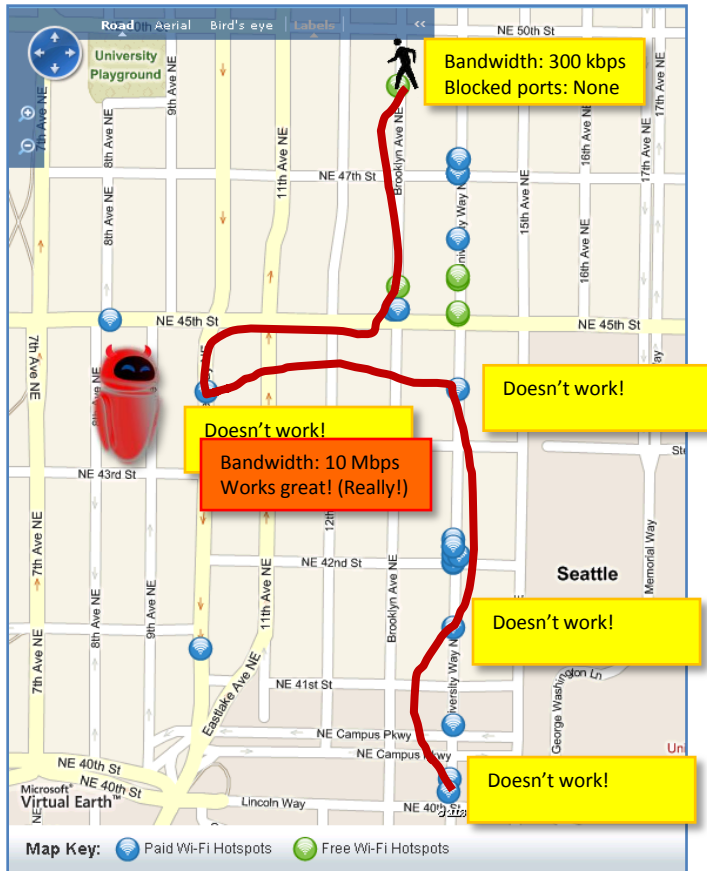
Research Challenges



- **Location privacy**

- Reports shouldn't be linked, otherwise they can be used to track users
- But also need to limit fraud; e.g., 1 report per AP per user
- **Solution:** new ecash-like reporting protocol & robust summary functions

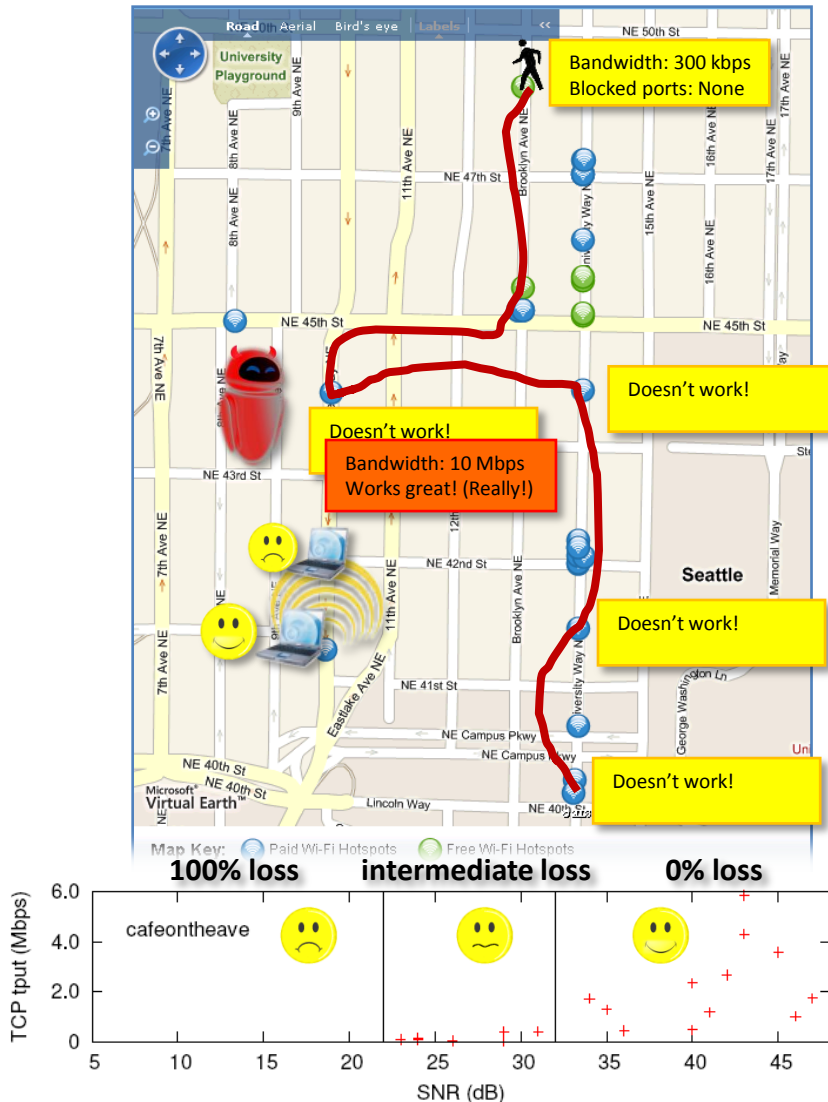
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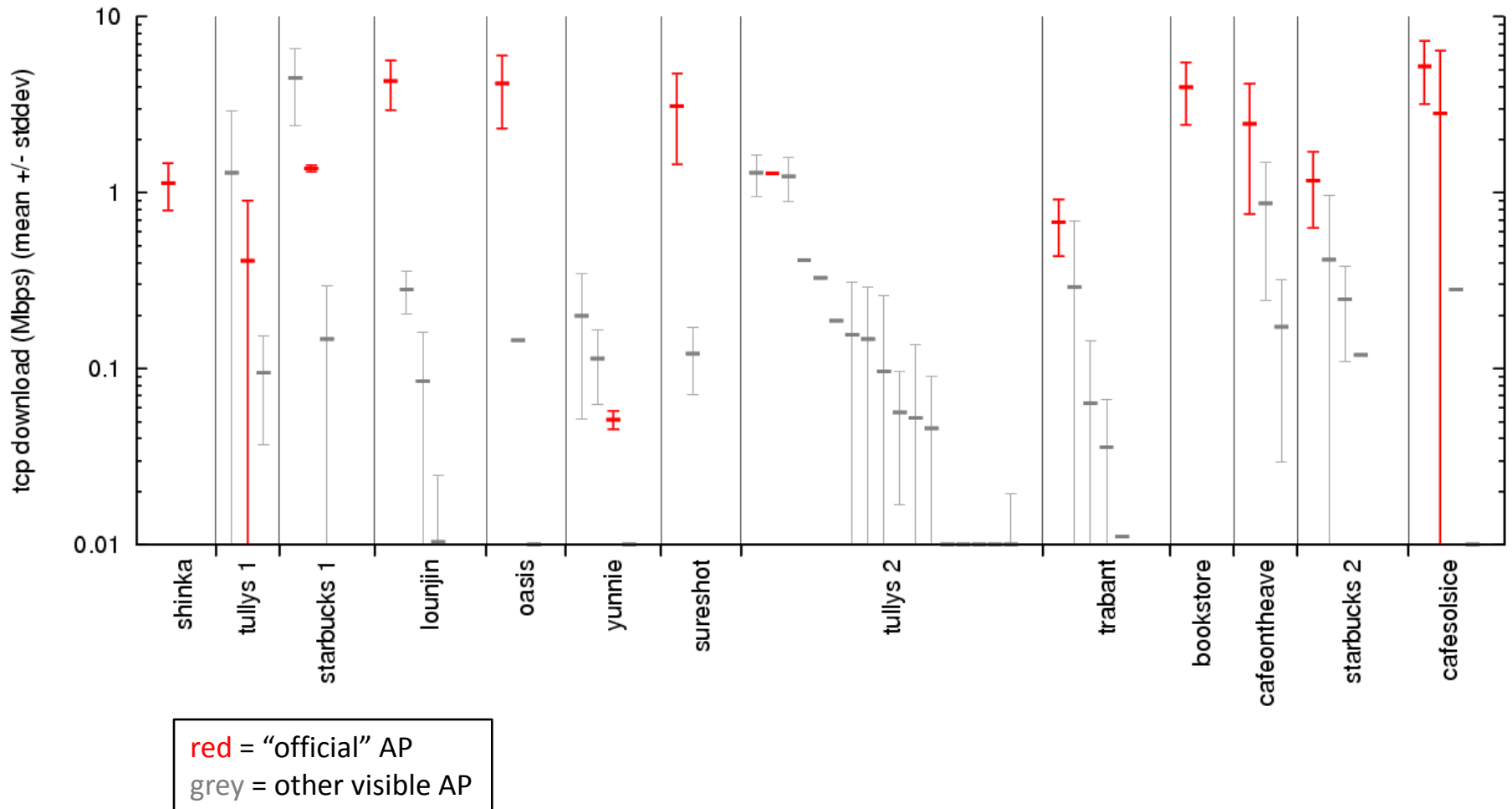
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- **Location context**

- Performance dependent on location with respect to AP
- Wireless channel effects loss rate
- **Solution:** estimate different loss regimes w/ distributed measurements

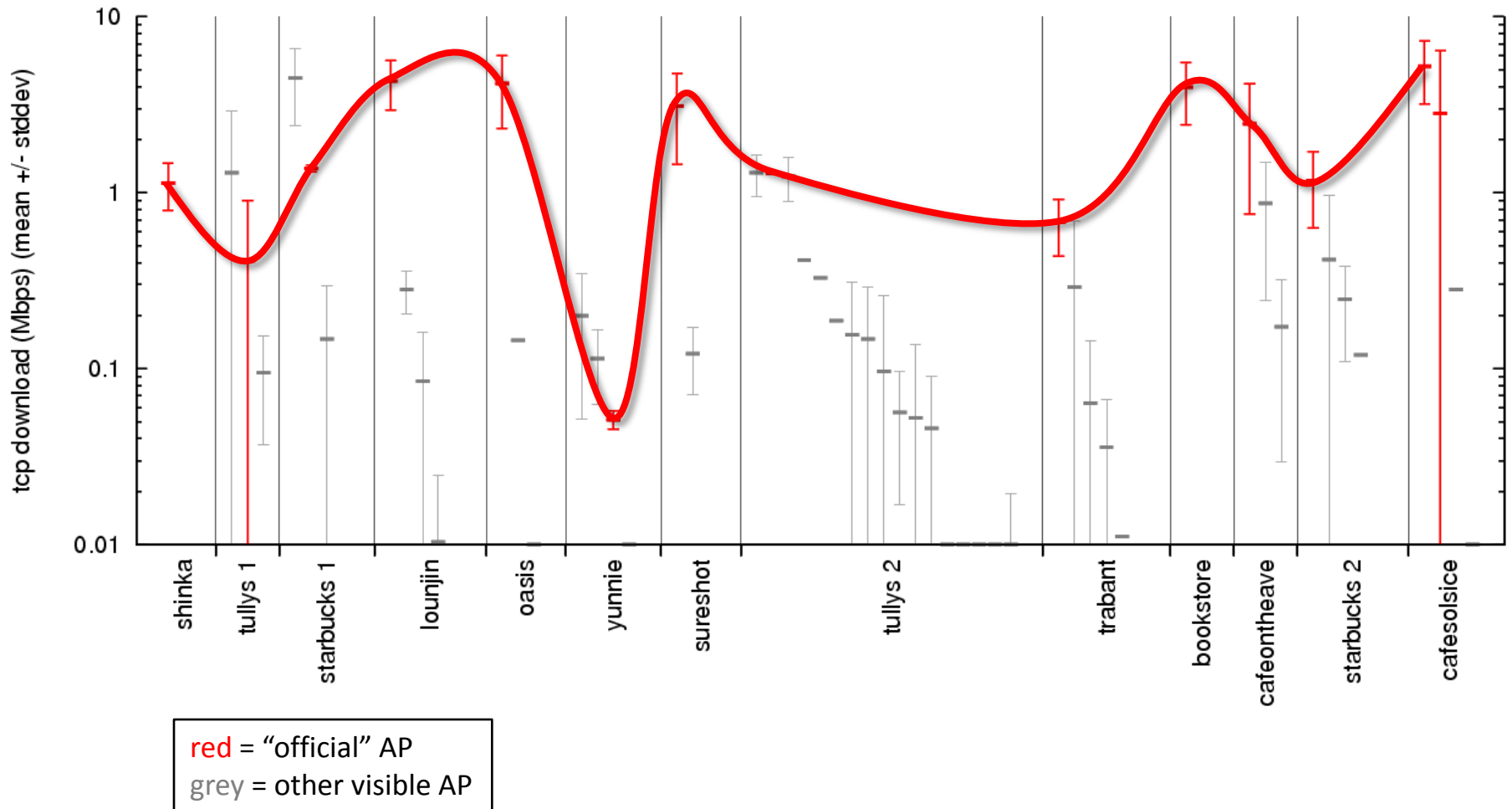
Will Reports Improve Selection?

Commercial APs at Seattle hotspot locations



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