

# Scalable Crowd-Sourcing of Video from Mobile Devices

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## Motivation

- Head-mounted devices are upcoming



- Crowd-sourced videos are valuable

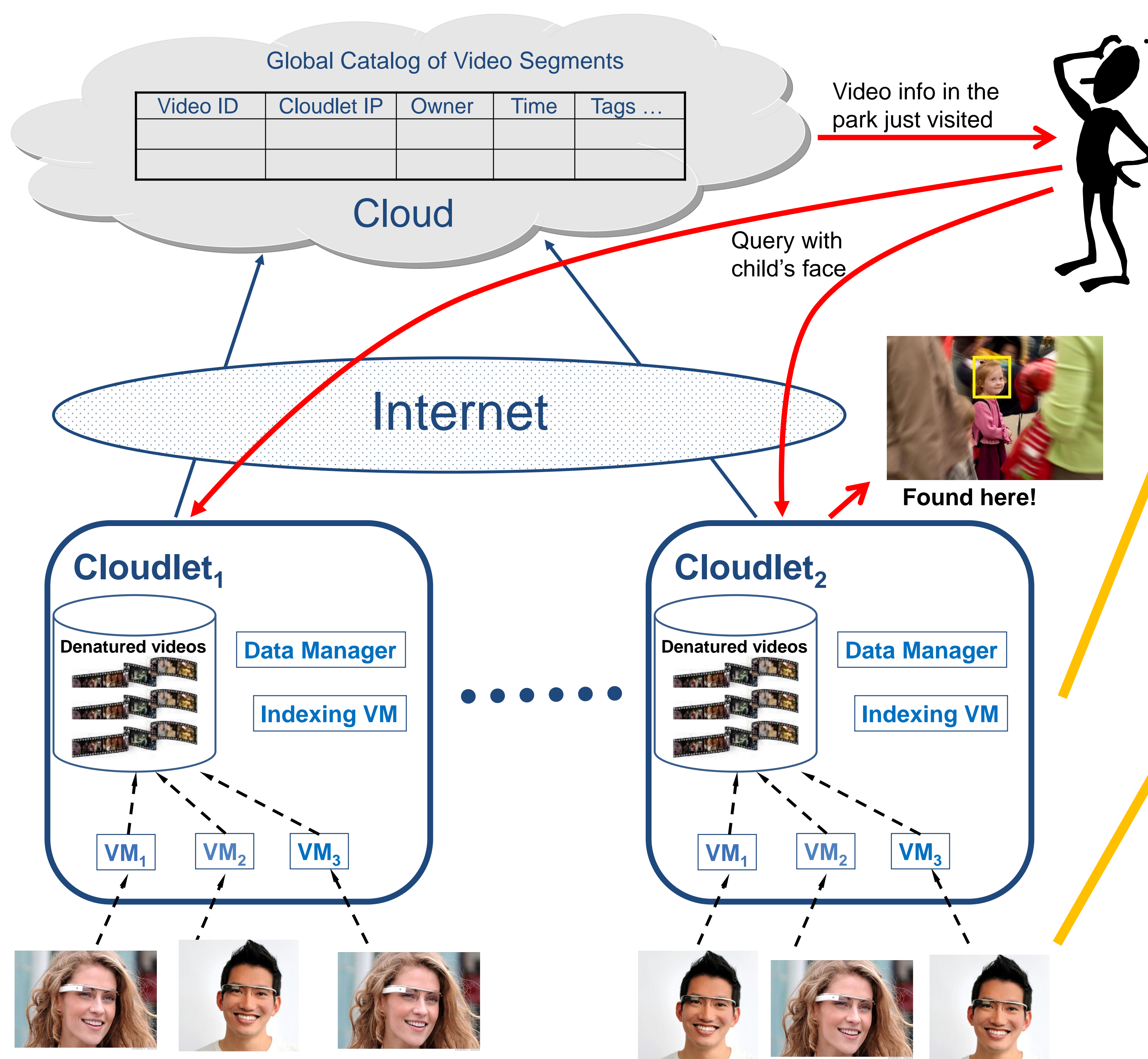


## Key Challenges

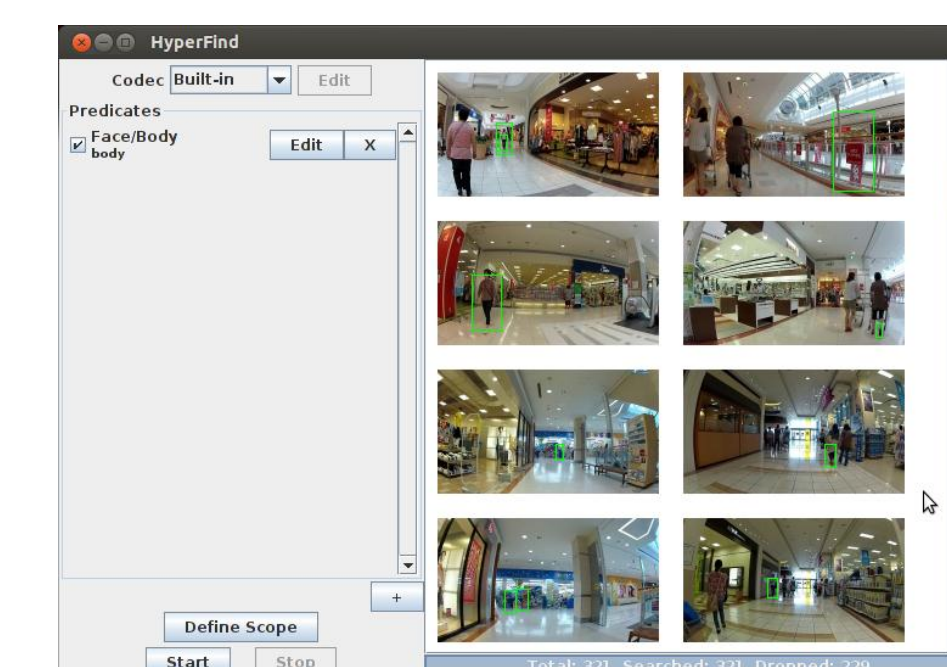
- Scalability – bandwidth limitation
- User privacy
- How to search efficiently?

## System Architecture

- Videos are stored at cloudlets, metadata goes to the cloud



### Search



- By index or content (face, texture...)

### Denaturing & Indexing

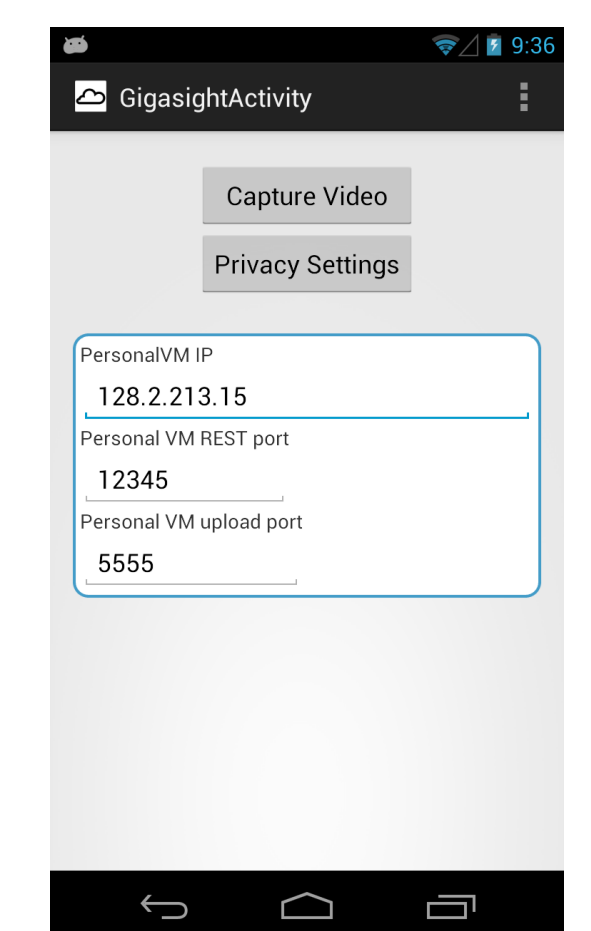
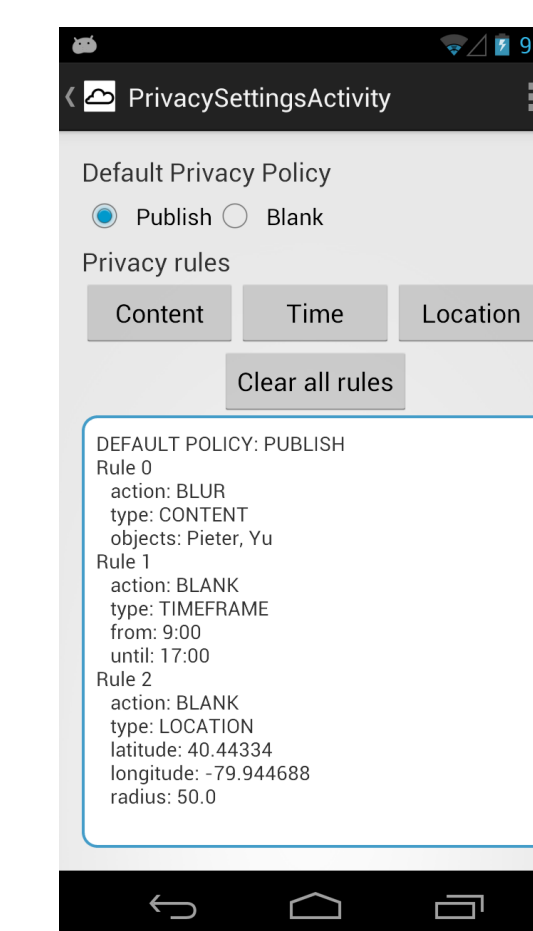
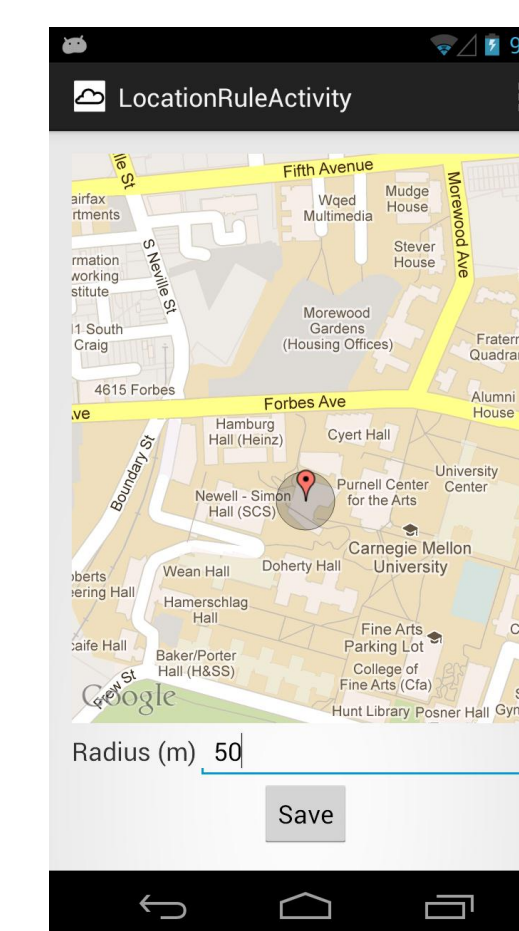
- Remove sensitive scenes & add tags



→ Dog, water

### Uploading to cloudlets

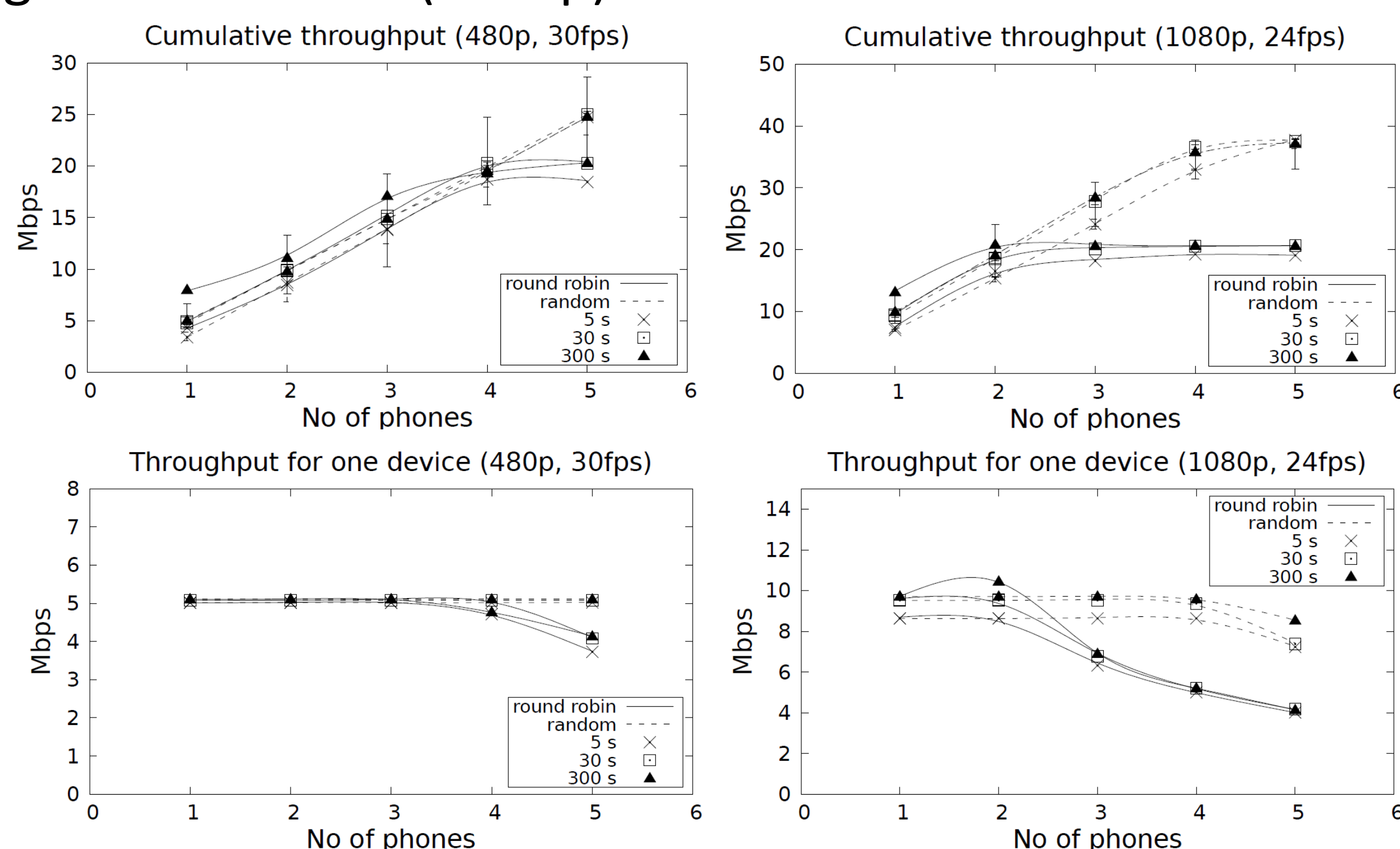
- Can specify privacy settings at client side



## Experimental Results

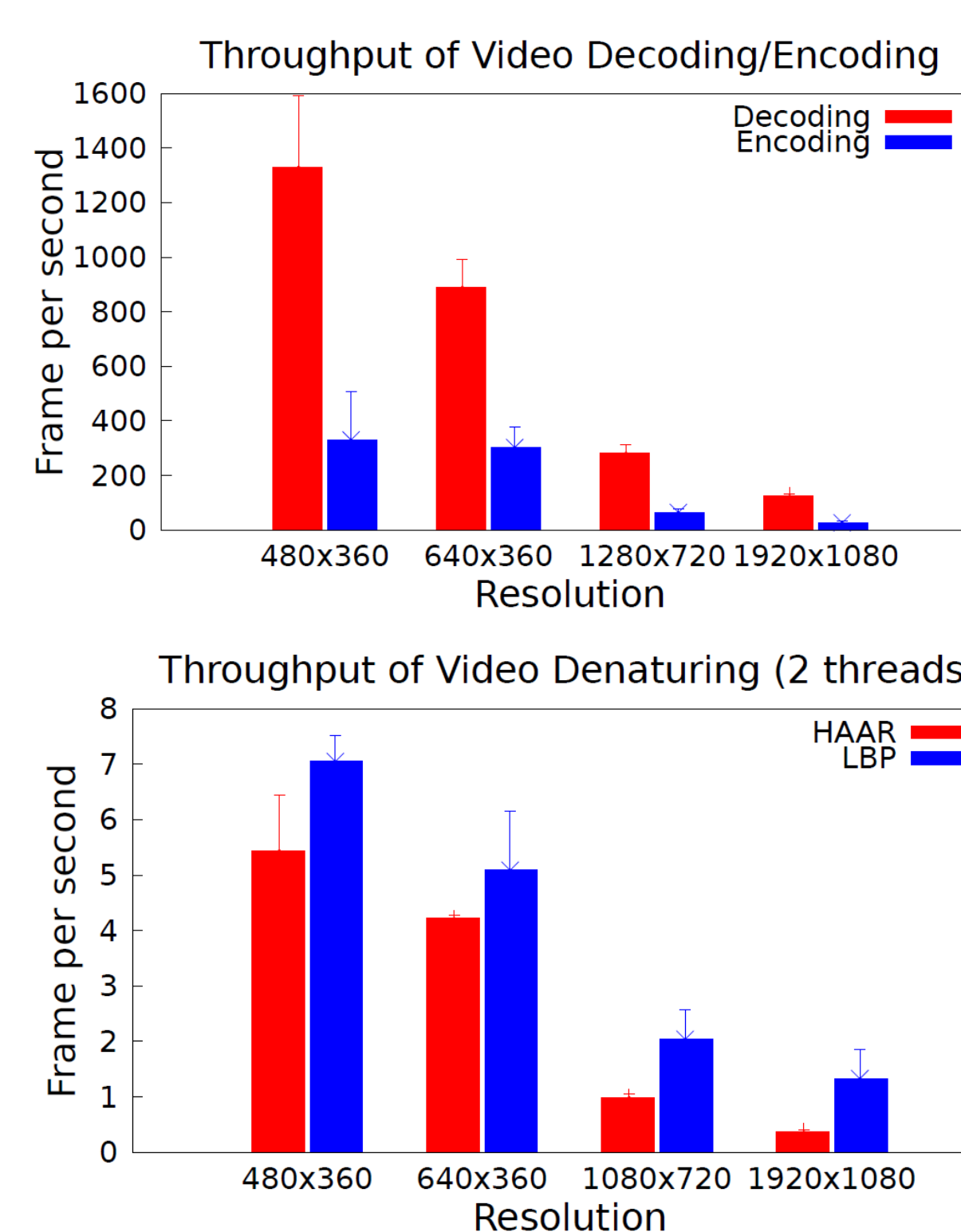
### Uploading to cloudlets

- One modern AP can concurrently support around 5 users for highest resolution (1080p)



### Denaturing

- Throughput varies with resolution (1fps – 7fps)



### Indexing

- Sufficient throughput to index one frame per several seconds

