

The role of context in image interpretation

1 Mobile Phone Visual Queries



Image + GPS

2 But, what is the question?

Foreground/background:

- | | |
|---------------|------------------|
| The sailboat? | Statsraad Lemkul |
| The wharf? | Bryggen i Bergen |

Whole/component:

- | | |
|----------------|-------------------|
| The cathedral? | Nidaros Domkirken |
| A statue? | Apostle Peter |

3 Resolving Ambiguity

based on:

- Object identification
- Image & object CONTEXT
- Interpretation probabilities

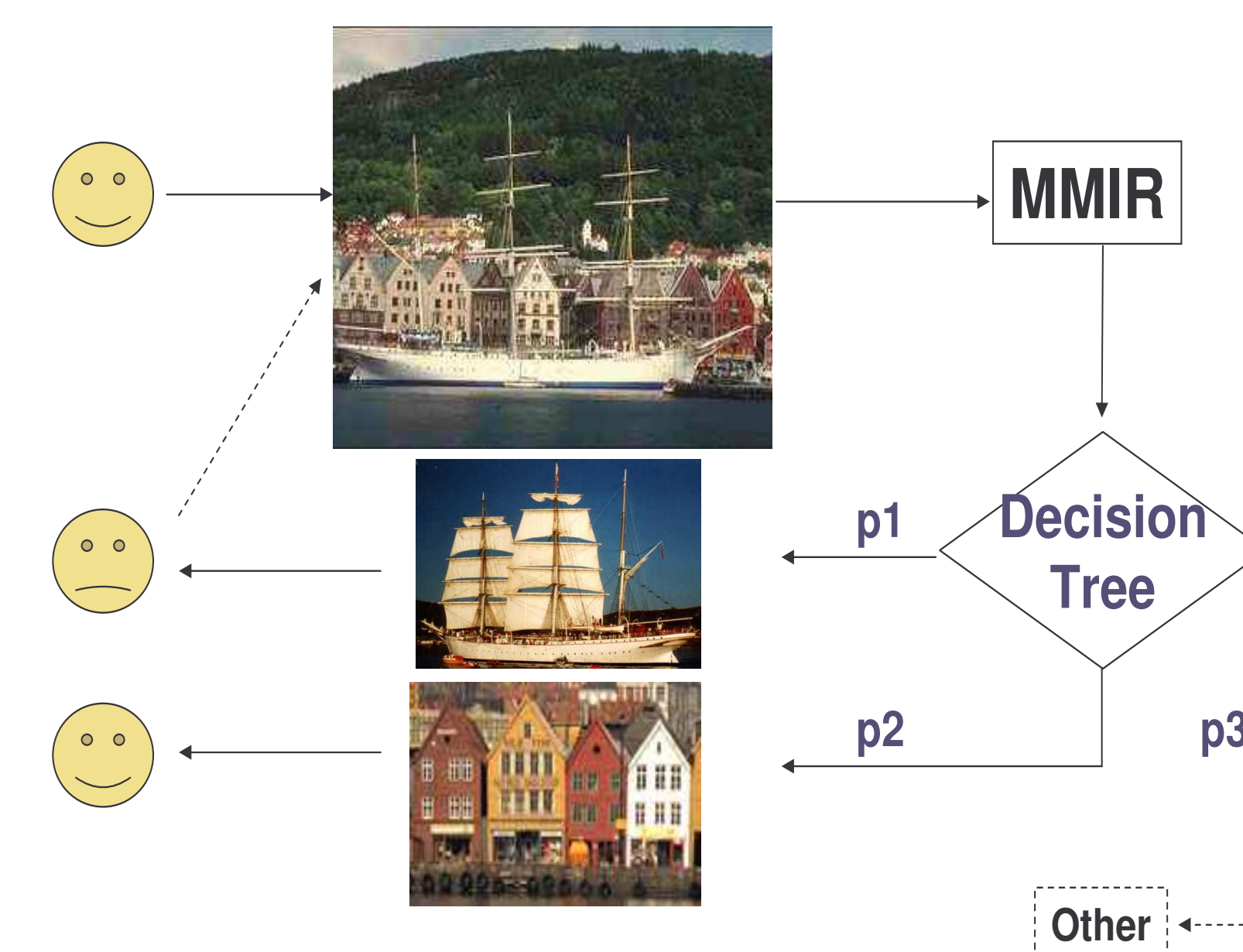
4 CONTEXT

Def: the information that must be *common knowledge* for communication to succeed.

Examples:

- Location & time
- Object representation
- Interpretation options & probabilities

5 Visual query interpretation

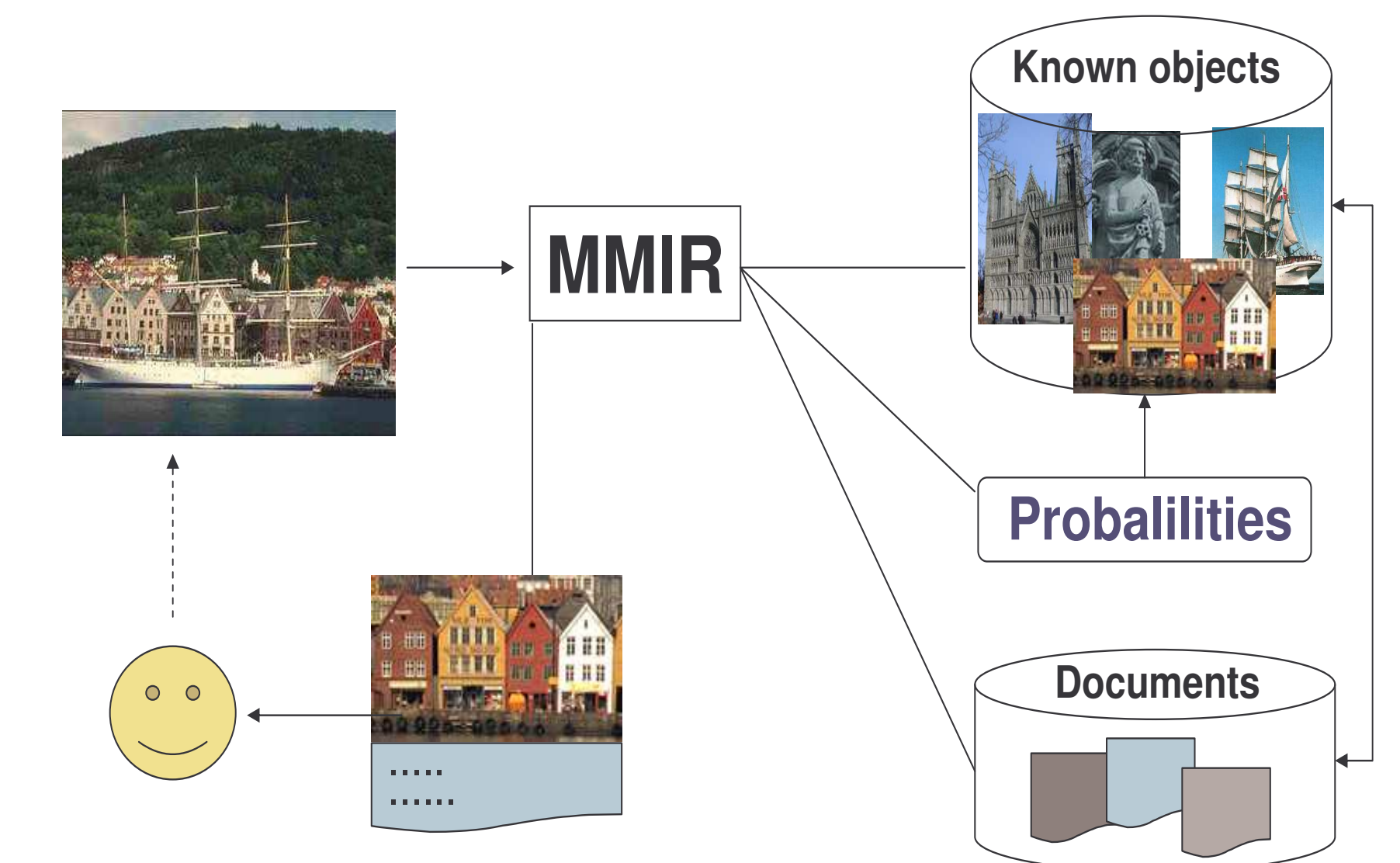


6 Determining user intention

Based on:

- Object relationships
- Camera settings (focus, perspective, ...)
- User location & feedback
- MMIR settings & 'learning'

7 Mobile Multi-modal Information Retrieval MMIR:



8 Summary

Given

- A set of non-ambiguous images
- Location(s) for source photos
- Object probabilities

Then

- Map query object(s) to stored images
- Determine probability of query intention