

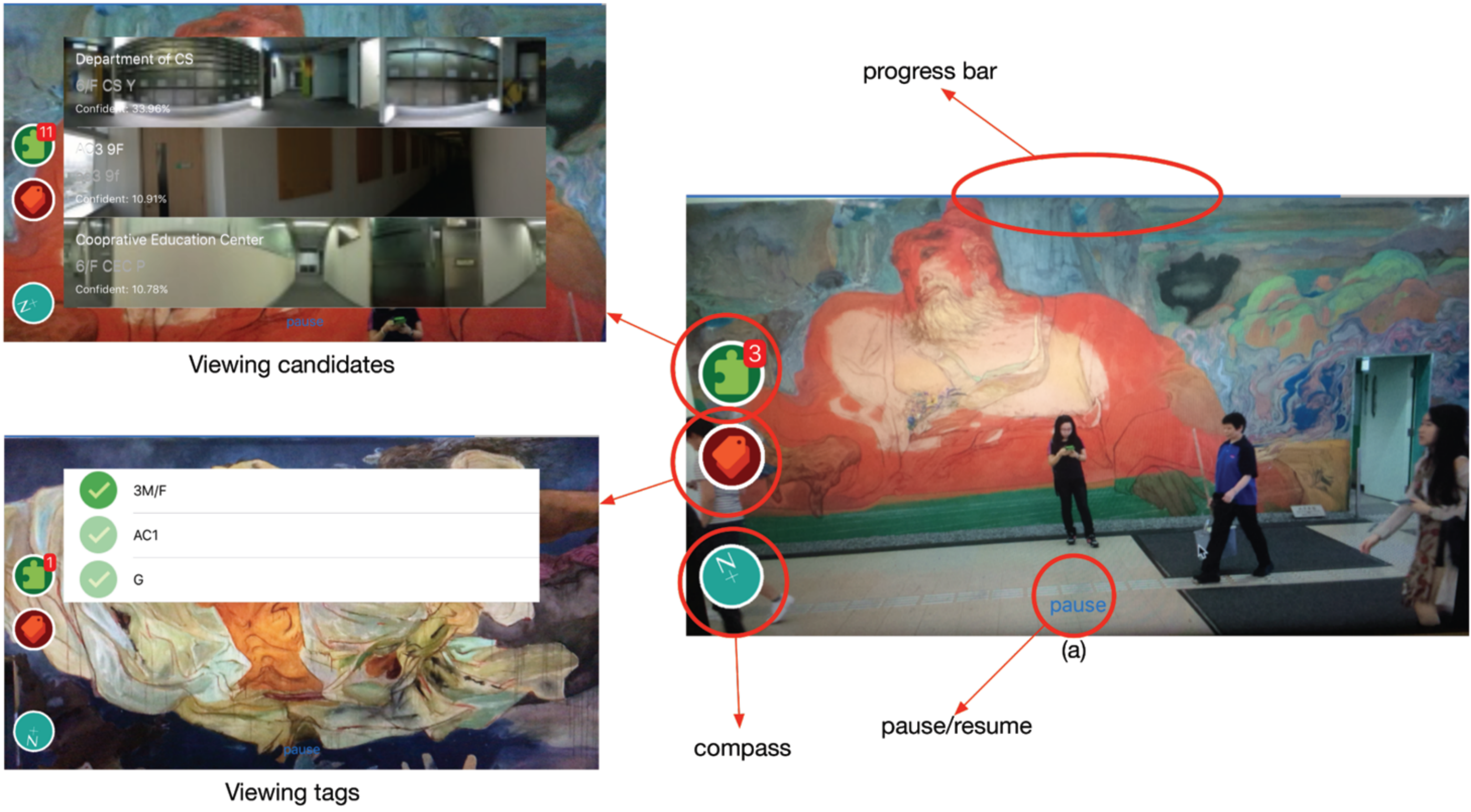
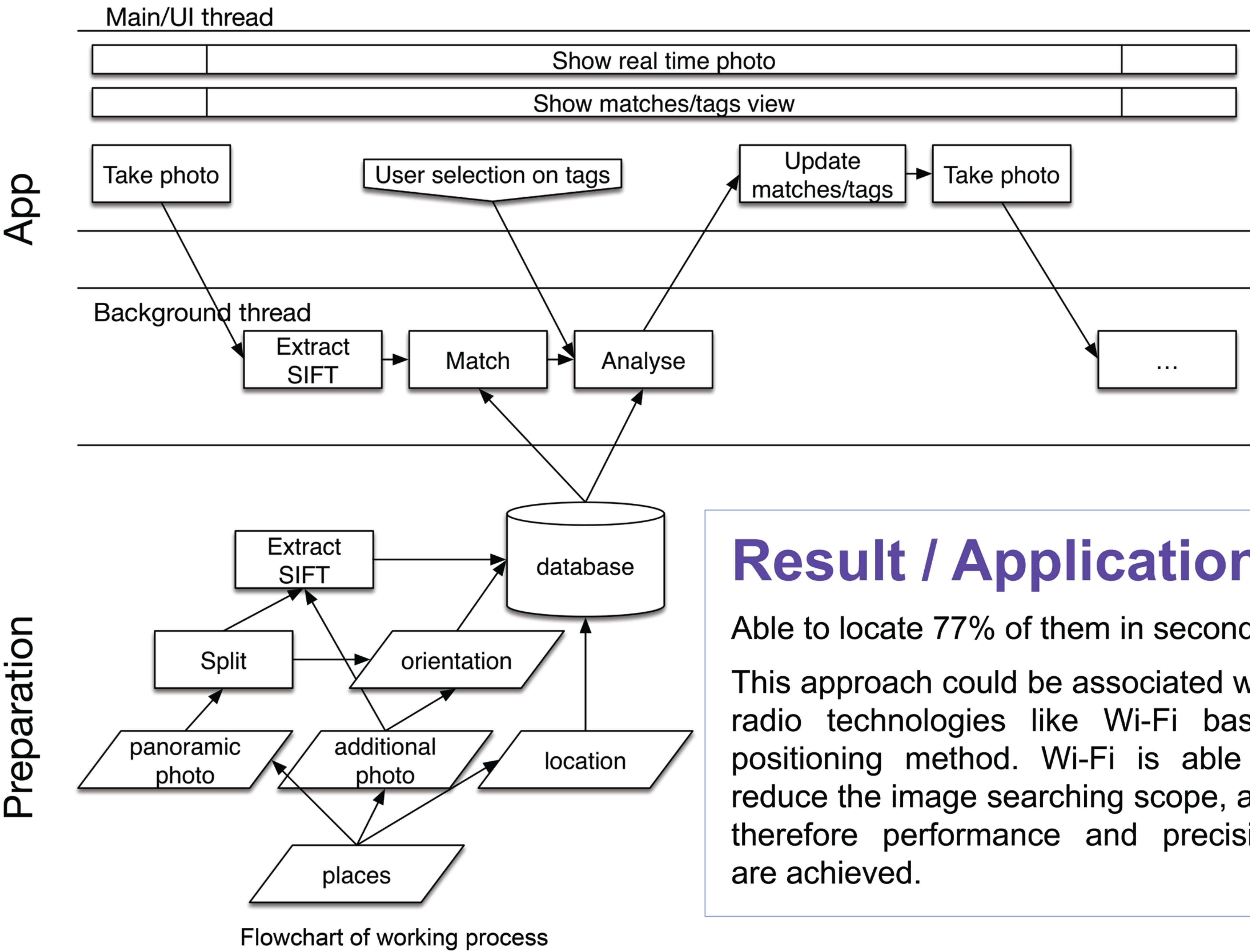
Image Based Indoor Positioning App Development

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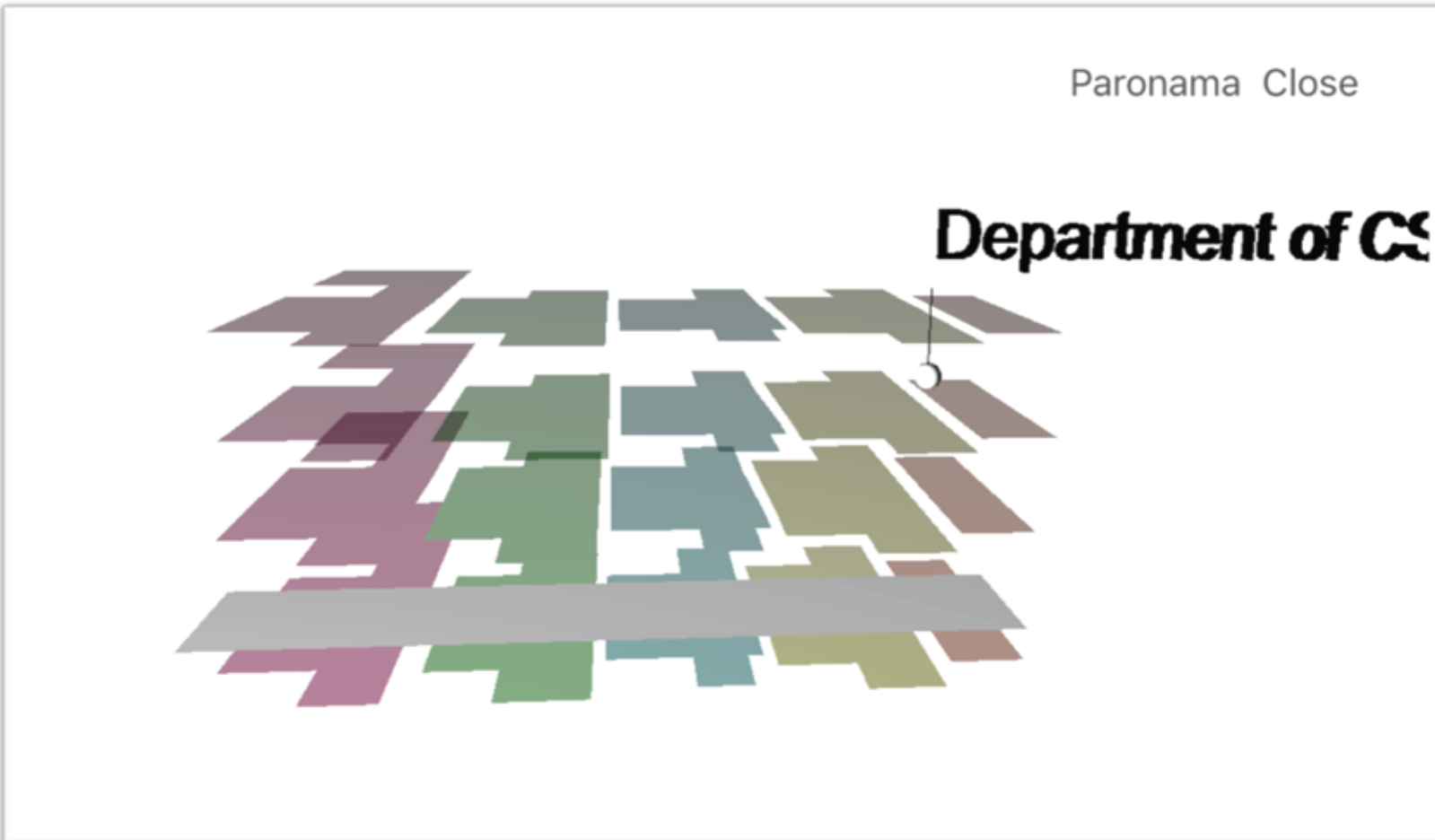
Introduction

This project aims to build a mobile application with image-based positioning technology that can determine user's location with camera. The idea is based on matching of image features between two images, where algorithm SIFT (Scale-invariant feature transform) is used to identify image features. An iOS application was built and tested on an iPhone. Image information of multiple spots in Academic 1 Building of City University of Hong Kong were collected into the application's database.

How It Works



App User Interface (Main)



App User Interface (Panorama/3D building)

Result / Application

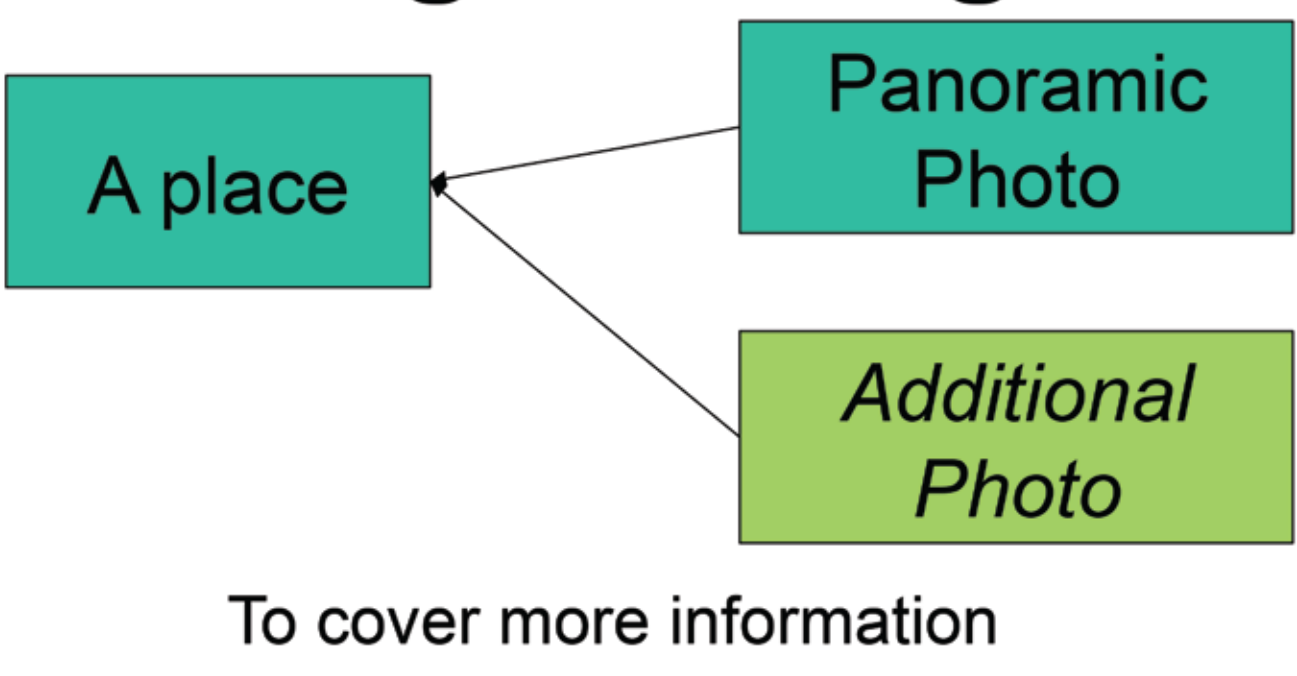
Able to locate 77% of them in seconds. This approach could be associated with radio technologies like Wi-Fi based positioning method. Wi-Fi is able to reduce the image searching scope, and therefore performance and precision are achieved.

Selective matching



splits panoramic images into 8 "sub-images" each with an orientation. Selective searching only a portion of them. Therefore, searching time is reduced.

Image linking

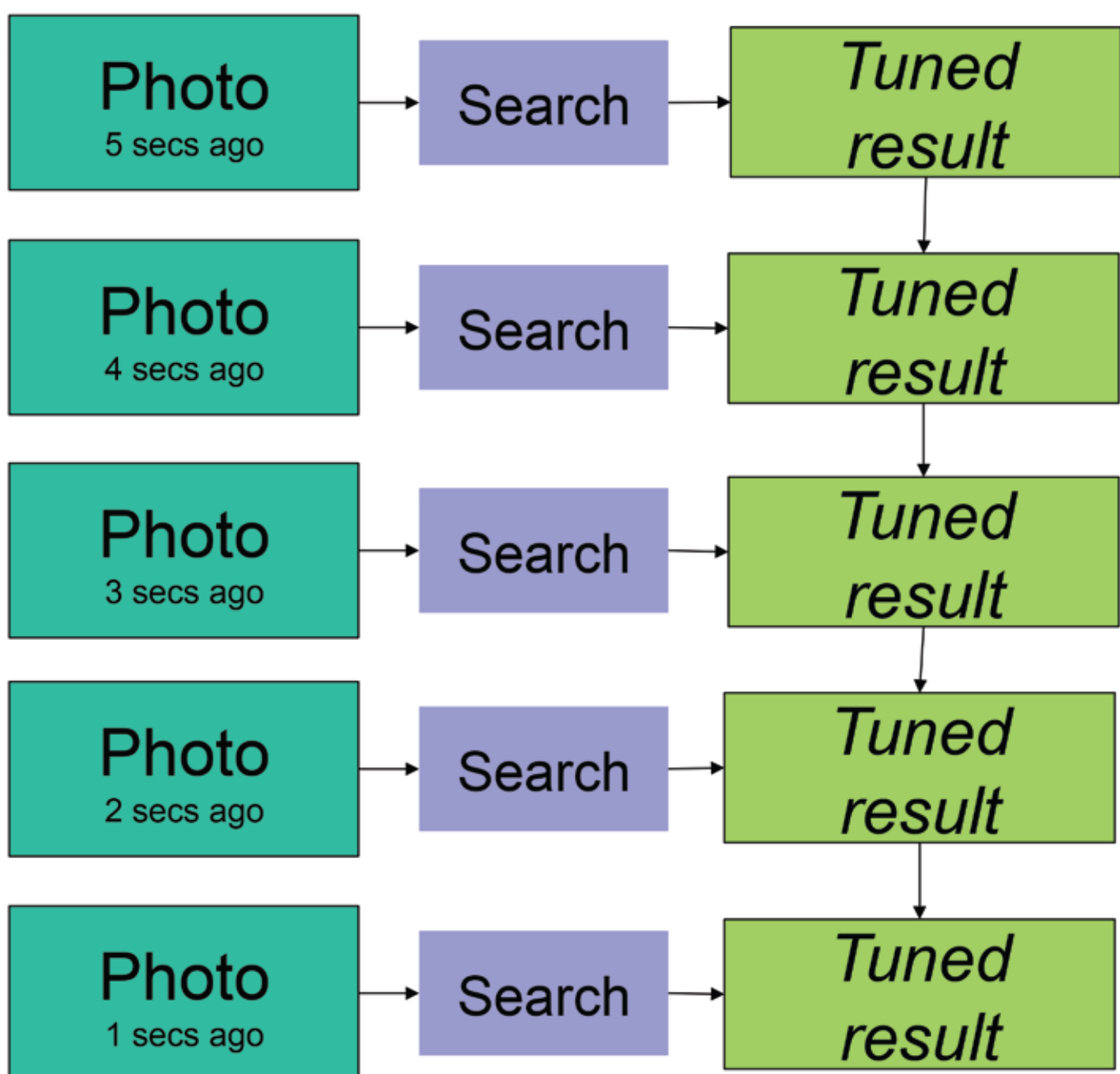


Tags



Let user to filter candidates

Content



Care about result from a series of searches instead of rely on result of single search



Theta S camera, used to capture panoramic image