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

Main/UI thread
- Show real time photo
- Show matches/tags view

Take photo
User selection on tags
Update matches/tags
Take photo

Background thread
- Extract SIFT
- Match
- Analyse

Preparation

Flowchart of working process

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.