Calculating accurate path costs by tracking traffic.

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1 Introduction

This concept paper highlights a method for calculating how long it takes to drive from place in a city to another. The method takes into account factors such as distance between source and destination and traffic congestion at a given place.
The path cost between two points as used in this paper is a measure of how long it takes one to get from one point the other. This cost can be calculated by actually driving between the 2 points many times using different routes, however, that is inefficient and expensive. This paper highlights a method in which data is collected in order to calculate these paths easily.

2 Problem Statement

Given two points, and a path that leads from one point to the other, calculate the cost for that path.
If there are many paths possible, this calculation would help in choosing the most time-efficient path to take.

3 Objectives

- To collect the image and geo data necessary.
- To use the data collected to calculate how long it will take to get from one place to another.

4 Methodology

Using ODK, "point" data will be collected. Point data consists of 4 fields:point in journey, traffic picture, time, and location.

- Point in journey: This is an identifier for where you are in the journey. Point 0 indicates the starting point. Subsequent points are $1, 2, 3, \cdots$
- Traffic picture: At each point, a picture of the road is taken. The point of this picture is to determine how congested that particular road is. An overhead picture would be prefferable since it can have a better view and coverage of the road.
- Time: This is the time at which this data point is being recorded. This will help in determining the actual time it took to travel between data points.
- Location: This consists of the coordinates of the place where this data point is being collected. This information will be used to calculate distances between points.