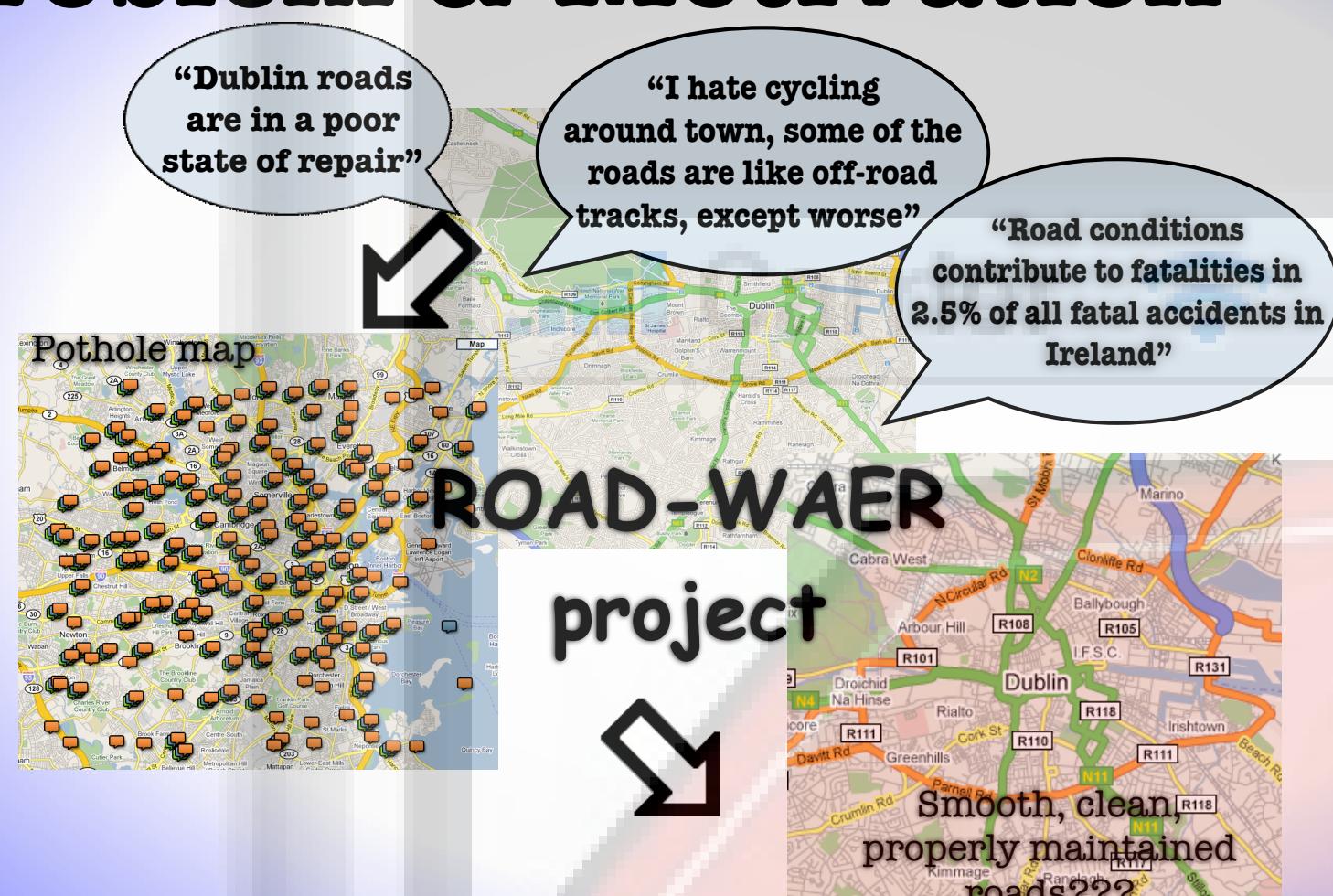


SenseTile in the City: Road-Wær

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Problem & Motivation



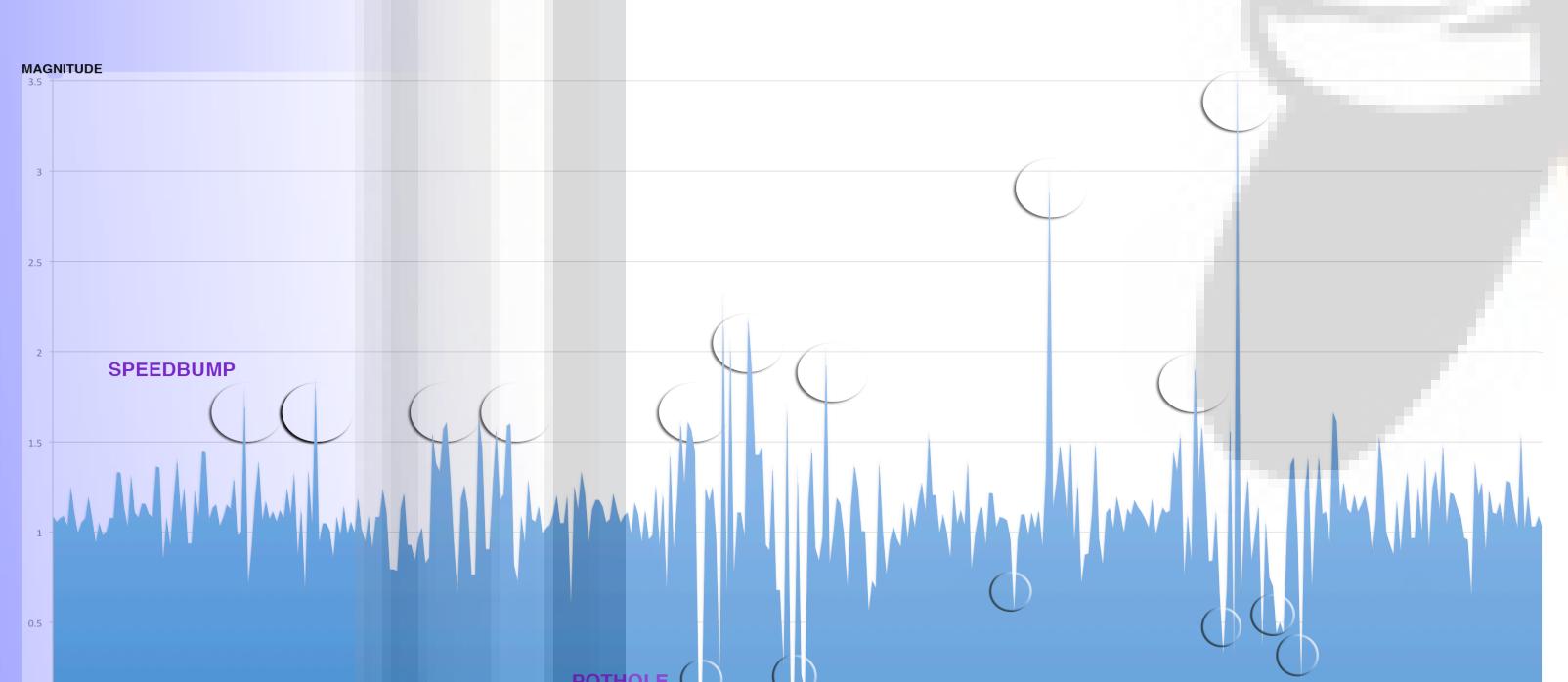
What is a Wær-Event?

Wær is a term identifying a road maintenance problem. A **Wær-Event** occurs when a vehicle encounters the problem e.g. hitting a pothole, going over a speedbump

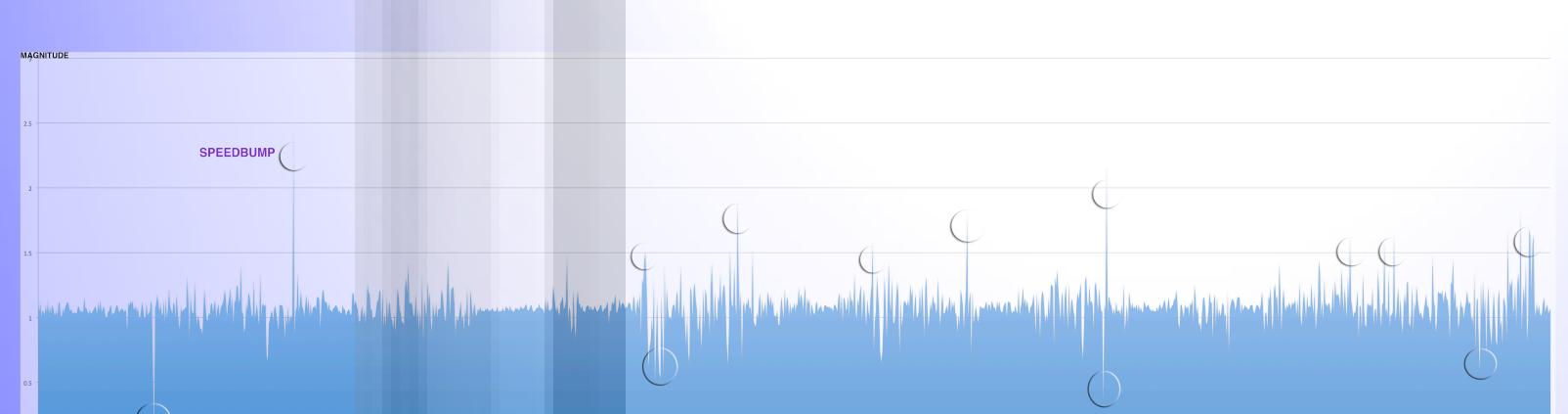
Classifying Noisy Acceleration Data

Steps taken:

- acceleration data collection for different types of vehicles
- data collation
- data analysis



Bicycle Accelerometer Data



Car Accelerometer Data

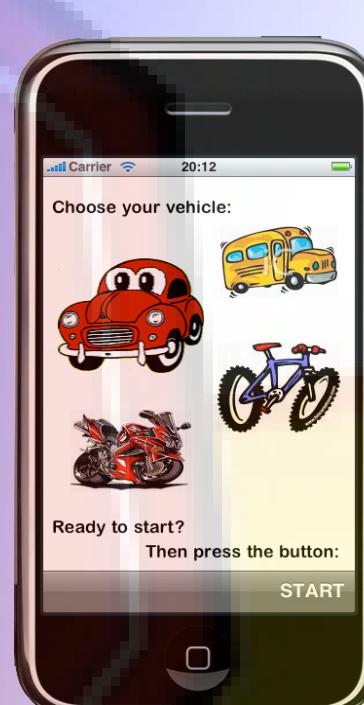
Future Work

- Analyzing a city: collecting and collating data
- Improvements in classification of Wær-Events
- Improvements in interface design

The Road-Wær Application

iPhone Interface

- user identification & authentication
- rich interface design
- personalization
- user-friendliness



Vehicle Types

- difference in mass, velocity
- bus versus car suspension
- magnitude of Wær-Event varies according to the type of vehicle

Accelerometer Detection



- iPhone responds to motion using a built-in accelerometer
- 10 Hz frequency is enough to detect and classify Wær-Events

Location, Location, Location

- iPhone3G finds the location quickly and accurately via GPS, Wi-Fi and cellular towers
- a Wær-Event triggers location detection
- colored location pins identify Wær-Events on the map



Mock Objects for Testing

- mock objects are simulated objects that mimic the behavior of real objects in controlled ways
- real and faked modes: accelerometer and location

