How to achieve a KOM on Strava

As the number of cyclists using Strava continues to grow, it is becoming increasingly difficult to achieve a high ranking on the leaderboard of any popular segment. Whilst it is possible to hunt for a top performance on some obscure route, attaining a KOM (or QOM) on a segment attempted by tens of thousands of other athletes is a real challenge.

This blog explores the various factors and strategies involved in achieving the status of King or Queen of the Mountains. It begins with an analysis of the highly popular Tour de Richmond Park segment in southwest London. Gaining a KOM requires an optimal combination between the rider/bike, the profile of the segment and prevailing environmental conditions. Using a model of the physics involved, it is possible to estimate the impact of changes in these factors on the time taken to complete the segment. Machine learning techniques can be used to improve the accuracy of the model.

# Empirical Observations of a Sample leader board – Tour de Richmond Park

## Solo versus drafting

## Time of day

## Time of year

## Weather conditions

## Basic conclusions

## Can we make this analysis more scientific?

# Factors to consider

## Allotropic model of rider

## Physics model

## Sensitivity to rider-related factors

### Power

### Mass

### CdA

### Wheels

## Sensitivity to environmental factors

### Profile of the segment

### Weather

#### Wind direction

#### Wind speed

#### Pressure

#### Temperature

#### Humidity

#### Altitude

# Machine Learning

## Potential refinements

## Big data

## Methodology

## Results