Bicycle Recognition

Detecting cycling activity and distance metrics
Project Question

Can a smartphone in any orientation on the user detect the user riding a bike and determine distance biked while minimizing energy use?
Possible Applications

- Health and Fitness tracking
- Communicating to hardware on a bike (lights, signals, possible rearview alertness camera)
- Trajectory tracking of users and mapping bike traffic
Evaluation

Smartphone - Android Sensor API

MATLAB - Sensor Data Analysis
Distance vs Time

- Distance
- Time

- Actual Distance
- Our Distance
Power Consumption (Battery Life)

- Our Solution
- Trivial, GPS solution

![Graph showing battery percentage over time with two lines: one for Our Solution and one for Trivial, GPS solution.](image)