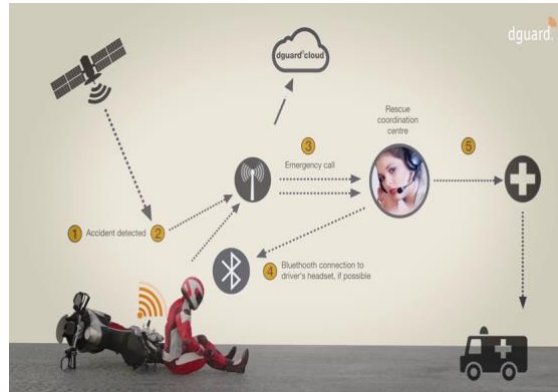


Early warning and crash detection in cycling



Modern e-bikes have sensors which are able to measure the forward speed, the angular speed and linear acceleration of the rear frame, the pedal torque support level, and the ambient temperature, at a sample rate of 2 seconds. A safety related question is: Can we use this sensor data to detect, at an early stage, the instability of a bicycle and can we detect if the cyclist has crashed?

Assignment:

Your assignment will be to get yourself familiar with the modern e-bike and their current sensor setup and capabilities. Develop a model for crash detection and the early warning system. Set up a number of experiments to validate your system and perform the tests in a safe manner.

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