Group Assignment: Bayes Filter Assumptions

Assignment Overview

The recursive Bayes filter is a mathematical model, and as with all models, it is an idealized approximation of the real world. For example, the Markov property is assumed. From that property, it follows that the measurement z_t is independent of all previous measurements given the state x_t.

Can you think of an example in which a previous measurement actually interferes with the current one in the real world? You may also consider sensors other than LiDARs, for example, sonar sensors. Please describe such a situation in 2-3 sentences

Further, find two other examples that show the difficulty of implementing a perfect Bayes filter in a real-world scenario and describe each in a couple of sentences. There are several hints in the slides.