



Building Artificial Intelligence for Physical Systems

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Abstract

Within a few years, Artificial Intelligence (AI) will drive most of our physical systems such as robots, cars and homes. Since these systems operate in the physical world, designing such AIs is quite challenging. For example, even a seemingly simple task of a robot making an omelette is quite challenging because the objects in the kitchen differ substantially. Computer vision can barely infer what they are, and we expect a robot to know how to manipulate them!

Humans have created a tremendous value by collecting and organizing all their knowledge in publicly accessible forms, as in Wikipedia and YouTube. Can we do the same for robots? For the example above, can a robot watch 10s of thousands of online videos and learn to make an omelette?