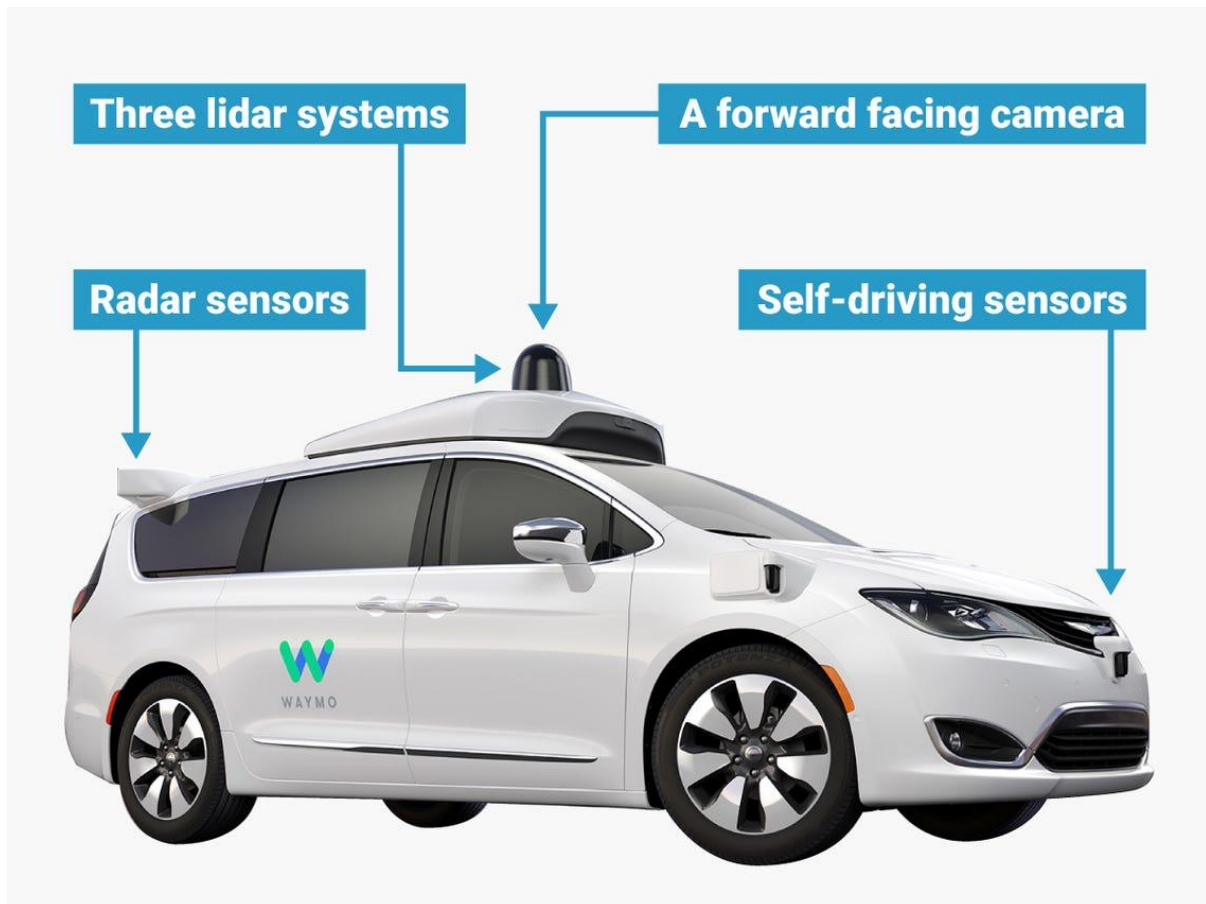


For each of the following examples, describe at least one possible input and output:

o A self-driving car:

Looking at this article from [Medium](#), my choice for an **input** (features) would be the lidar (laser) system. What is this and how it works? According to our Medium post, “*You can say they’re like radar but give a little better picture quality, and lasers can go far so you have a greater range of view. The lasers are usually placed in a spinning wheel on top of the car, so they spin around very fast, looking at the environment around them*”. Although is not good in bad conditions such as rainy weather or foggy weather, this can be quite impressive in getting the data around your car (scanning everything in real-time). Maybe you’ve already heard about the [Waymo](#)—formerly Google self-driving car project, if not please see the picture below.

The **output** of course would be localisation and mapping, checking in real time their location and building a real-time map with the detected 3d objects, or something that is for sure a benefit for society without any doubt is the avoidance of collision.



o Netflix recommendation system

Having a look at this presentation from [Prezi.com](https://prezi.com/), Netflix has about 62 million users in nearly 50 countries. One of the **inputs** they suggest is “subscriber rates titles that he/she has watched”, but I would like to add more inputs such as the type of movies they choose to watch, for example, comedy, action, etc. or data from someone with a similar account based on views and preferences. ([Source](#))

When it comes to **output** (prediction), I suggest something similar to the request from our task, a recommendation system based on the genre or a personalised recommendation based on the user’s views and preferences.

o Signature recognition

For this simple task, the **input** can be captured images from a scanner or a high-pixel digital camera ([Source from this research](#)) or a signature captured using a digital pen or stylus similar to what the website [DocuSign](#) is using. The **output** that first came to my mind is to verify if the signature matches or check the time and location of the signature.

o Medical diagnosis

Our **input** (explanatory variables) to use for our machine-learning algorithm to learn from could be lab test results such as blood tests, liver tests, urine tests etc. The outcome (**output**) for medical diagnosis is to recommend treatment for the patient, predict any complications or find out if the lab test came with any medical condition such as diabetes, asthma etc.