3.5 Learning

In an autonomous system, the most normal way to use machine learning is for its movement and decision making. Either by creating an AI which can find the best route to a place or by making one that can choose what to do at each step to go in a specific direction. Machine learning can also be used to recognise objects of interest around the autonomous system. This is more like information processing than decision making, however it is still just as useful in this context. Trained AIs can also be used for prioritising problems and decision making when handling multiple problems at the same time. This can be trained in simulations beforehand and run continuously during operation to allow for better model with experience from almost all problems.

In the case of the automatic extraction and refuelling station, it is possible to use machine learning for most of these cases. Image recognition and decision-making is perhaps the most important, as the station will have to be able to recognise rockets and could have to deal with both low amount of fuel, energy, dangerous objects on collision course and a goal to reach at the same time. However, the general path planning is normally not that big of a problem once a goal is chosen, as most of space is empty, and the station must be able to move in three dimensions. This is still a situation where it can be used and would allow for possible extra doublechecking of decisions.