We researched to microprocessors, namely Arduino Uno and Raspberry Pi 3. Here is a brief comparison.

# Arduino Uno

Arduino a simple microprocessor that runs C code directly on the processor, meaning it does not use operational system (OS). It is useful for simple applications that does not require multi-threading. This means that Arduino can only run a single programme at the time. Its clock speed is 16 MHz, which is not sufficient for demanding tasks such as computer vision. However, it is satisfactory for simple applications using sensors such as ultrasonic and IR. Because Arduino runs code directly on the CPU, it may be quicker in performing simple tasks than microprocessors using OS. Arduino does not contain WiFi, Bluetooth nor SD card reader.

# Raspberry Pi 3

Raspberry Pi is basically a small computer. It requires to install an OS. It has CPU speed of 1.2 GHz and 1 GB of RAM. These facts enables it to run several programmes at once and perform sophisticated tasks. It also means that there is greater spectrum of possibilities in terms of choice of programming language, libraries and frameworks. Raspberry Pi contains WiFI, Bluetooth and SD card reader, hence we would not have to use any additional modules compared to Arduino.

# Our choice

We decided to opt for Raspberry Pi 3, mainly because we want to run several scripts and once. We will benefit from framework called Robot Operating System (ROS). It provides various framework, libraries and tools that are widely used in robotics. The main advantage for us would be using its integrated messaging framework when multi-threading. It makes it easier to debug the code and see live data wirelessly. We are also looking into using rosbags (part of ROS) for recording and playing back data.