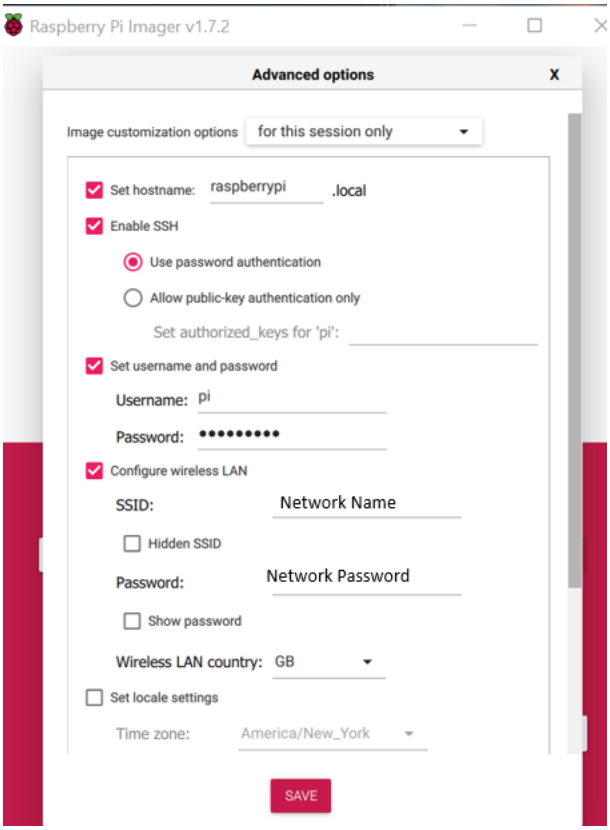
Setup Raspberry Pi Zero 2 W

1. Download Raspberry Pi OS
    a. https://www.raspberrypi.com/software/
2. Run Raspberry Pi Imager
    a. Operating System: Raspberry Pi OS (32-bit)
    b. Change the settings:



    Password: raspberry
    c. Storage: Choose microSD card connected to your laptop
    d. Click Write
    e. Select 'YES' when prompted with erasing all existing data
    f. Pull out and plug back in the microSD card since it is automatically ejected
    g. Should now see 'boot' drive in This PC
3. Inside Boot Drive:
    a. To boot straight into raspberry pi:
        i. Within Config.txt add: "dtoverlay=dwc2" at the bottom
    b. Inside Cmdline.txt add: "modules-load=dwc2,g_ether" after rootwait with a space on each side

Optional: Do not do these steps if used manual settings in step 2B:

    c. Wifi Setup: Headless Raspberry Pi Zero 2 W SSH WiFi Setup (Mac + Windows, 10 Steps) – desertbot.io
        - Inside boot folder make file named: wpa_supplicant.conf

- Paste the following with your network information inside

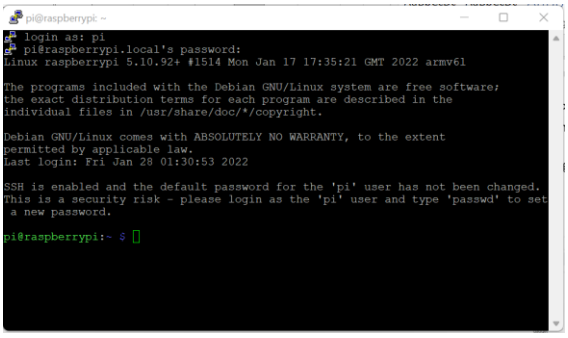
```
country=US
ctrl_interface=DIR=/var/run/wpa_supplicant GROUP=netdev
update_config=1

network={
  ssid="NETWORK-NAME"
  psk="NETWORK-PASSWORD"
}
```

- Hint: to find your network name and password use the following two commands:
  - $netsh wlan show profile
  - $ netsh wlan show profile yournetworkname key=clear

d. Enable SSH on raspberry pi
   i. Inside Boot drive add a file named “ssh” with no extension

e. Eject MicroSD

4. SSH (Way 1)
   a. Download Bonjour and Putty
      i. Download Bonjour Print Services for Windows v2.0.2 (UK) (apple.com)
      ii. Download PuTTY - a free SSH and telnet client for Windows
   b. Open Putty
      i. Host name: raspberrypi.local
      ii. Login: pi
      iii. Password: raspberry



(Way 2) Use Gitbash:
$ ssh pi@raspberrypi.local
Password: raspberry
Source: https://www.youtube.com/watch?v=XaTmG708Mss

5. Update Raspberry Pi
   a. $sudo apt-get update
   b. $sudo apt-get upgrade
   c. $sudo apt-get install libatlas-base-dev

d. $pip install tflite-runtime
e. $pip install matplotlib
f. $pip install -U numpy

6. Check Storage, Arm Version, and number of cores
    a. $df -h
    b. $uname -m
    c. $nproc
7. Bluetooth Connection (Source: Setting Up Raspberry Pi Zero Bluetooth | Microcontroller Tutorials (teachmemicro.com))
    a. Run the following commands:
        - $bluetoothctl
        - $agent on
        - $default-agent
        - $scan on
        - Find Bittle:
            - [NEW] Device 77:90:17:88:77:35 BittleBLE-877735
        - $pair 77:90:17:87:77:35
            - Pin: 0000 (or 1234)
        - $trust 77:90:17:87:77:35
        - $quit
        - $bluetoothctl paired-devices
            - Should show bittle is paired
        - $bluetoothctl info 77:90:17:87:77:35
            - Gives information

```
pi@raspberrypi:~/Desktop/transfer_rep/bittle_controller $ bluetoothctl info 77:9
0:17:87:77:35
Device 77:90:17:87:77:35 (public)
        Name: BittleSPP-877735
        Alias: BittleSPP-877735
        Class: 0x00001f00
        Paired: yes
        Trusted: yes
        Blocked: no
        Connected: no
        LegacyPairing: no
        UUID: Serial Port               (00001101-0000-1000-8000-00805f9b34fb)
        RSSI: -47
```

        - $ sudo rfcomm bind hci0 77:90:17:87:77:35 1
        - Ardserial.py port should be updated to '/dev/rfcomm0'
        - Source: Bluetooth as a serial port - Raspberry Pi Forums
        - bluetooth - Using /dev/rfcomm0 in raspberry pi - Raspberry Pi Stack Exchange

8. Run
    a. Move bittle_controller directory to raspberry pi
    b. $ python run_tflite_raw.py --mode deploy --model_number 13