

# Object Detection with Deep Learning on Raspberry Pi

## Step 1: Setting up your Pi

1. Go to <https://www.raspberrypi.com/software/> and download it onto the sd card after configuring it with your wifi and passwords
  2. Put the sd card into the bottom of the pi as well as plug the power cable in
  3. Open up the terminal
  4. Type: `sudo raspi-config`
  5. Go to interface options
  6. Enable vnc
  7. Then download <https://www.realvnc.com/en/connect/download/viewer/>
  8. Open up thonny and test it out
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## Step 2: Download and setup VScode

1. Go to <https://code.visualstudio.com/> and download it onto your external computer
  2. Ssh into your pi
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## Step 3: Gather data (images)

1. Find at least 25 images per subject you wish to test
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## Step 4: Train API with images

1. Go to <https://nanonets.com/> and make labels for each subject
  2. Add all of the images per label into the API
  3. Take the code after testing and add it into the vnc
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## Step 5: Testing with image links

1. Go to <https://imgur.com/upload> and upload one of your images from the data you collected
2. Open the finished image in a new tab
3. Take the link (it should look something like <https://i.imgur.com/meotKfR.png>)

4. Take this link and put it into the link area on your code from the API in VScode
  5. It should print out how certain it is of what label the image matches
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## Step 6: Setting up a website

1. Download docker into your pi following steps from <https://pimylifeup.com/raspberry-pi-docker/>
  2. Create the website by following <https://tecadmin.net/tutorial/docker-run-static-website>
  3. Use <https://tecadmin.net/tutorial/docker/docker-dockerfile/> to build the website
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## Step 7: Port Forwarding

1. Depends on your router but overall you need to forward port 80 to your pi
  2. Replace the link in the API code with the new link from your port-forwarded website
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