**User Manual to Navigate Face Mask Detection program:**

1. **Step 1: Install Necessary Library’s:**
   1. Through Terminal

Background pattern

Description automatically generatedNavigate to this panel within visual studio code and type in the following lines of code individually:

pip install tensorflow, pip install opencv-python, pip install numpy, pip install matplotlib,

pip install streamlit, pip install xmltodict, pip install retina-face.

* 1. Through Anaconda distribution

Download Anaconda Navigator/Distribution here: https://www.anaconda.com/products/distribution

Graphical user interface, application

Description automatically generated

Navigate to the environment tab on the left then select “not installed” from the drop-down box in the top.

Graphical user interface, text, application, email

Description automatically generated

In the top right corner, where it says, “search packages”, search the following packages individually, tick the box on the left and click apply in the bottom right to install.

Graphical user interface, text, application, email

Description automatically generated

1. **Step 2: File Location, Additional Folders and Dataset:**

Install the files and move them into a collective folder and name it whatever is to your liking. Within the folder create two additional folders and name them (“with\_mask” and “without\_mask”). Once the previous steps are completed download the following dataset through Kaggle, furthermore rename the folder which contains the dataset as (“facemask\_data”) and save it to the collective folder:

<https://www.kaggle.com/datasets/andrewmvd/face-mask-detection>

1. **Step 3: Extract Face Mask File:**

Firstly, this file must be run first, in order for this file to run smoothly, the file paths mentioned in the code must be correct. Ensure that (data\_path, image\_path, label\_path, with\_mask\_path, without\_mask\_path) correspond to the following folders.

Once the previous steps have been accomplished, the file is ready to be run. Once the file is run, you will notice that within the folders of with\_mask and without\_mask which were previously empty will contain images of people either wearing masks or not.

1. **Step 4: Model Building Facemask Classification File:**

This file should be the second file to run, to run, ensure that the file paths mentioned in the code are correct similar to the previous step. Once this is achieved, the file is ready to run.

1. **Step 4: App File:**

In order to run this file, type the following into the terminal “streamlit run app.py”, once this has been typed, you will be redirected to a streamlit page where you will be able to upload images ready for classification.