**Usage PDF – deep learning CNN**

**Windows installation:**

# Install Python (**version X.X or higher**) (skip if already installed)

1. Python only
2. download from:
3. …
4. …
5. Python with IDE

# Install pip packages

1. Open command-terminal by typing “cmd” in windows search bar
2. In command-terminal, write:

pip install numpy pillow scipy matplotlib natsort scikit-image

1. Install tensorflow:

pip install tensorflow-cpu // if have NO GPU

pip install tensorflow-gpu // if have GPU

1. Download files
2. Clone or download git repo

**Mac installation:**

1. Install Python
2. Pip packages
3. Download files

**Usage:**

1. Data format
2. please ensure all images are “.tiff” format
3. channels are NOT separated
4. all files to be analyzed are located in a SINGLE folder (see example below)
5. Run main file
6. If in **command console:**

* Type:

*python mainUNet.py*

1. If in **IDE:**

* Press the “run” button with file “main\_UNet.py” open

1. Navigate GUI
2. First thing that appears prompts you to enter some parameters for the analysis
3. Then navigate to and select the --- **directory**
4. Then navigate to and select the --- **directory**
5. Then navigate to and select the --- **directory**

**Training:**

**Demo run:**

**Optional:**

* If want to use your own checkpoint from training, navigate to the folder “Checkpoints” and replace the files with your own checkpoint files.

**Usage PDF – heuristic MATLAB algorithm**

**Required software:**

* MATLAB 2017

**Windows installation:**

1. Download files

**Usage:**

* Run file…
* Image of stuff to input…

**Modifications:**