This is the Introduction file to the ECE5584 Final Project Submission, Fall 2019 for Matthew Kayrish. This submission package contains the following files.

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| **This File** | This is the Table of Contents for the submission. |
| **ECE5584FinalProject\_MGK.pptx** | This is the final presentation summarizing the Final Project results. |
| **FinalProject.docx** | The word document of the final project assignment. |
| **trainFP.py** | The top level function calling trainXXX.py for training a variety of CNNs. |
| **trainBilat.py** | This function will apply bilateral filtering to the noisy images prior to training a CNN. |
| **trainWavelet.py** | This function will split the noisy images into LL, LH, HL, and HH wavelets prior to training a CNN. |
| **trainCNN.py** | This function will train a CNN based on the noisy images as input. This is included for comparison purposes. |
| **calcWavelet.py** | This includes functions for calculating the discrete wavelet transform (DWT) and the Inverse DWT. |
| **dataset.py** | This module contains classes and methods for processing data for training on the GPU. |
| **model.py** | This module contains classes for building the networks. |
| **noise\_generator.py** | This module contains classes and functions for generating various types of noise. |
| **utils.py** | This module contains various utility classes and functions for executing the Final Project. |
| **testImage.py** | This function will receive an input image, add noise to it, then apply one of the trained models or the Wiener filter for denoising. The Wiener filter is added for comparison only. |
| **testFP.py** | This is a top level function that will test the input images in a variety of configurations. |
| **Lena.png, Cameraman.png** | These are the test images used for the Final Project. |