Readme File

In this file, you will find all of the libraries, methodologies, and references used to achieve this project.

1. Libraries to download
2. Visual Studio Code 2022

- <https://code.visualstudio.com/download>

1. Flask: A web framework for building the backend of your application.

* pip install Flask

1. OpenCV: An open-source computer vision library that we use for image processing.

* pip install opencv-python

1. Remember to create a virtual environment for your project to manage dependencies more effectively. You can do this using the following commands:

# Create a virtual environment

python -m venv venv

# Activate the virtual environment (for Windows)

venv\Scripts\activate

# Activate the virtual environment (for macOS/Linux)

source venv/bin/activate

1. For implementing denoising autoencoders and other machine learning algorithms for image restoration, you'll need additional Python libraries. Here are some commonly used libraries for machine learning and deep learning in Python:

TensorFlow or PyTorch:

- TensorFlow and PyTorch are popular deep learning frameworks. You can choose either of them based on your preference.

# For TensorFlow

pip install tensorflow

# For PyTorch

pip install torch

1. Keras:

- Keras is a high-level neural networks API that runs on top of TensorFlow or Theano. It provides a convenient way to define and train deep learning models.

- pip install keras

1. Scikit-learn:

- Scikit-learn is a machine learning library that provides simple and efficient tools for data analysis and modeling.

- pip install scikit-learn

1. Matplotlib and NumPy:

Matplotlib is a plotting library, and NumPy is a library for numerical operations. They are often used for data visualization and manipulation.

* pip install matplotlib numpy

1. Denoising Autoencoder Libraries (Optional):

You might want to explore specific libraries or modules for implementing denoising autoencoders. While TensorFlow and PyTorch provide the necessary tools, some additional libraries focus on autoencoders specifically.

```bash

# Example: install a denoising autoencoder library

pip install git+https://github.com/alexvlis/dA.git

```

These libraries will provide the foundation for implementing and training machine learning models for image restoration. Depending on your specific requirements, you may need additional libraries or specialized modules for tasks such as data augmentation, model evaluation, etc. Always check the documentation for the specific libraries you plan to use for the most up-to-date installation instructions and examples.

1. Metholodgies