FLORIDA TECH

Project name : Super-resolution imaging

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https://github.com/tjawha002/chatTJ.git

Description :

   The purpose of this project is, I will discuss image-related issues and their solutions through the presentation of images. One such issue is the loss of quality when an image is zoomed in. To address this problem, in this project . I will suggest Super Resolution in OpenCV, which is a valuable tool for enhancing image quality. This project aims to explain how Super Resolution works in Image Processing and why it is essential for image enhancement.

   The model I use it for this project (Deep Neural Network based Super Resolution) and I will use the FSRCNN techniques and Deep Recursive Convolutional Network (DRCN) .

The data I use it for this project form this webwide website   https://learnopencv.com/super-resolution-in-opencv/

Expected Scope:

   Super resolution refers to the process of enhancing the resolution of an image, typically by increasing the number of pixels in the image. Simple interpolation methods like nearest neighbor, linear, or bicubic cannot significantly improve the resolution of images because they only generate new pixels based on nearby pixel values. However, specialized deep learning architectures can be used to achieve super resolution in real-time by training the model on a large dataset of low-resolution and high-resolution image pairs, allowing it to learn the underlying patterns and generate high-quality, detailed images.

Expected Outcomes for this project:

   With the aid of deep learning, super resolution models can generate images with a higher resolution and simultaneously minimize issues like pixelation, artifacts, and other undesirable outcomes.

Key References

https://arxiv.org/abs/1804.03360

https://pyimagesearch.com/2020/11/09/opencv-super-resolution-with-deep-learning/