NANYANG TECHNOLOGICAL UNIVERSITY
SINGAPORE

School of Computer Science and Engineering
College of Engineering

Learning to See in the Dark

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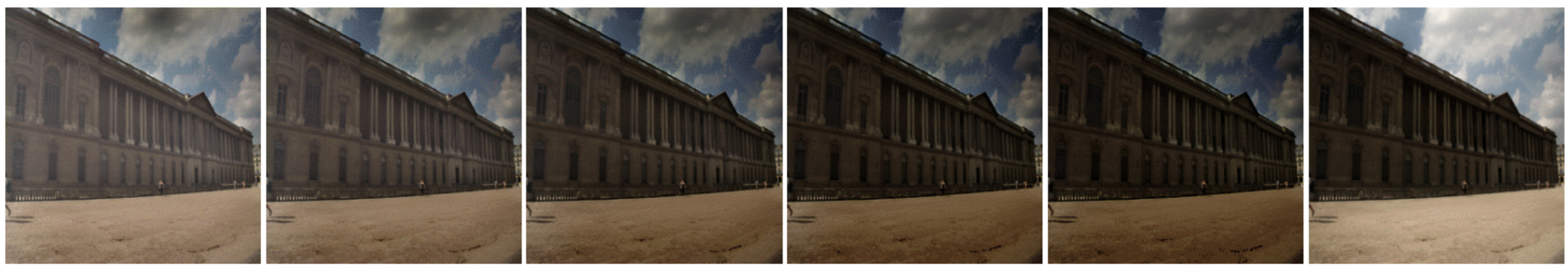
Sample Low-Light Image Enhancement Results



Data Augmentation at Different Brightness Levels

Project Objectives:

The purpose of low-light image enhancement is to recover information lost in low-light regions. There is a need for the generation of more realistic low-light images that are closer to real images taken in low-light scenes due to limited paired datasets. Our method is comparable to current state-of-the-art methods and shows promise in improving face and object detection in the dark.

Approach:

1. **Domain Adaptation**: Generation of realistic low-light images using CycleGAN to translate between real and synthetic domains.
2. **Data Augmentation**: Brightness levels of the generated images can be adjusted.
3. **Low-light Enhancement**: Train an attention guided-UNet on the augmented paired data.

Object Detection in the Dark