

# MAIS 202 FINAL PROJECT: DELIVERABLE 1

## Image Super-Resolution and Denoising

### Description

1. Dataset used: <http://places2.csail.mit.edu/index.html>

#### Reason:

- Places contains more than 10 million images comprising 400+ unique scene categories. The dataset features 5000 to 30,000 training images per class, consistent with real-world frequencies of occurrence making it suitable for CNN.

2. Methodology:

- a) **Data Preprocessing:** Fortunately, the dataset is already split into training, validation and testing. I have to transform the high-resolution images to low resolution.
- b) **Machine Learning model:** A Convolutional Neural Network model would be suitable
- c) **Evaluation metric:** The Peak-signal-to-noise ratio (PSNR) is used to measure noise in an image. It is the ratio between the maximum possible power of a signal and the power of corrupting noise<sup>1</sup>.

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<sup>1</sup> IMAGE DENOISING AND SUPER-RESOLUTION USING RESIDUAL LEARNING OF DEEP CONVOLUTIONAL NETWORK

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