## RestoreX-AI: A Contrastive Approach towards Guiding Image Restoration via Explainable AI Systems

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## 1. Overview

In this supplementary material, we present:

- 1. The image similarity grouping of classes used in the RestoreX-AI approach for evaluating restoration progress (Section 2).
- 2. The complete restoration samples with attention maps generated by all 4 restoration methods (Section 3).

## 2. Class Similarity

The table 1 contains the categories of labels grouped with a similarity measure of 1 in the proposed approach.

## **3.** Complete Restoration Progress

Given below are the extra figures to supplement the experimentation section of the paper.

Person	Car	Motorcycle	Bus	Bicycle
Groom	Cab	Moped	Trolley bus	Tandem bicycle
Bridegroom	Taxi		Mini bus	Tricycle
Baseball player	Race car		School bus	Unicycle
Scuba Diver	Jeep			Mountain bike
	Minivan			All-terrain bike
	Estate car			Off-roader
	Station wagon			Trike

Table 1. Categories of labels grouped with Similarity 1.



Figure 1. Restormer Grayscale Denoising: Grad-CAM Attention Maps for (a) Fog (b) Dust tornado (c) Rain and (d) Snow weather conditions.



Figure 2. Restormer Color Denoising: Grad-CAM Attention Maps for (a) Fog (b) Dust tornado (c) Rain and (d) Snow weather conditions.



Figure 3. Weather-RainGAN: Grad-CAM Attention Maps for (a) Fog (b) Dust tornado (c) Rain and (d) Snow weather conditions.



Figure 4. Weather-NightGAN: Grad-CAM Attention Maps for (a) Fog (b) Dust tornado (c) Rain and (d) Snow weather conditions.