




Robust-Wide: Robust Watermarking against Instruction-driven Image Editing

Runyi Hu^{1,2}, Jie Zhang^{1*}, Ting Xu³, Jiwei Li⁴, and Tianwei Zhang¹

¹ Nanyang Technological University
runyi_hu@163.com
{jie_zhang, tianwei.zhang}@ntu.edu.sg
² S-Lab, NTU

³ National University of Singapore
xuting@nus.edu.sg

⁴ Zhejiang University
jiwei_li@zju.edu.cn

1 Real-World Images Dataset

Here, we present a comprehensive overview of the construction process for the real-world images dataset. To encompass a diverse range of image modifications reflecting real-world scenarios, we opted for six categories of images from the Internet: person, animal, object, architecture, painting, and scenery. For each type, we chose five images and designed six hand-crafted editing instructions, respectively. More details are provided in the following part.

1.1 Real-World Images of Different Types

We show real-world images of different types in Figure 1.

1.2 Hand-crafted Editing Instructions

We show the designed editing instructions for each type.

Animal

“Move it to the desert”
“Put on a pair of sunglasses”
“Make it a cartoon”
“Make it in Van Gogh’s artistic style”
“Make it Picasso style”
“Make it Minecraft”

Architecture

“Make it an Egyptian sculpture”
“Turn it into ruins”
“Put it on fire”
“Make it Picasso style”

* The corresponding author

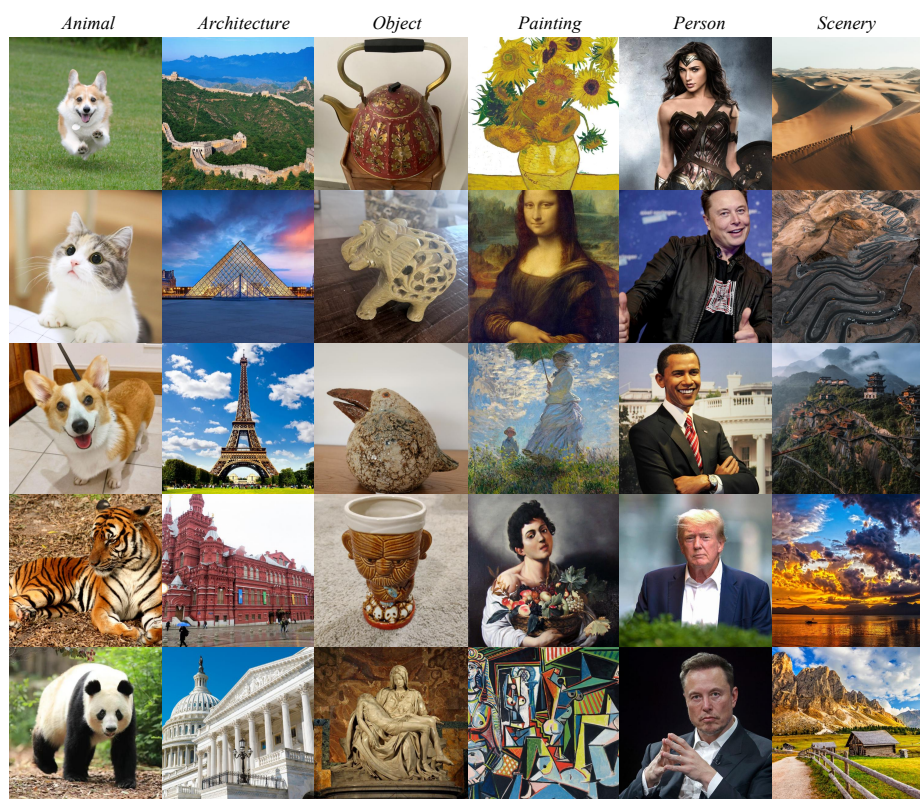


Fig. 1: The real-world images of six types.

“Make it in Van Gogh’s artistic style”

“Make it Minecraft”

Object

“Replace it with an apple”

“Change it with a rose”

“Move it on the moon”

“Make it a Modigliani painting”

“Turn this into the space age”

“Make it Minecraft”

Painting

“Make it a Modigliani painting”

“Make it a Miro painting”

“Make it Picasso style”

“Make it a Van Gogh’s painting”

“Make it Minecraft”

“Make it a cartoon”

Person

“Apply face paint”

“Make it a zombie”

“Take off the clothes”

“Make it a marble roman sculpture”

“It should look 100 years old”

“Make it Minecraft”

Scenery

“Add a beautiful sunset”

“Cover it with snow”

“Make it a cyberpunk painting”

“Make it a Van Gogh’s painting”

“Make it Minecraft”

“Make it a pencil drawing”

2 More Visual Examples

2.1 Main Results.

See Figure 2.

2.2 Robustness Against Different Instruction-driven Image Editing Methods.

See Figure 3.

2.3 Robust-Wide’s Extracting Mode.

See Figure 4.

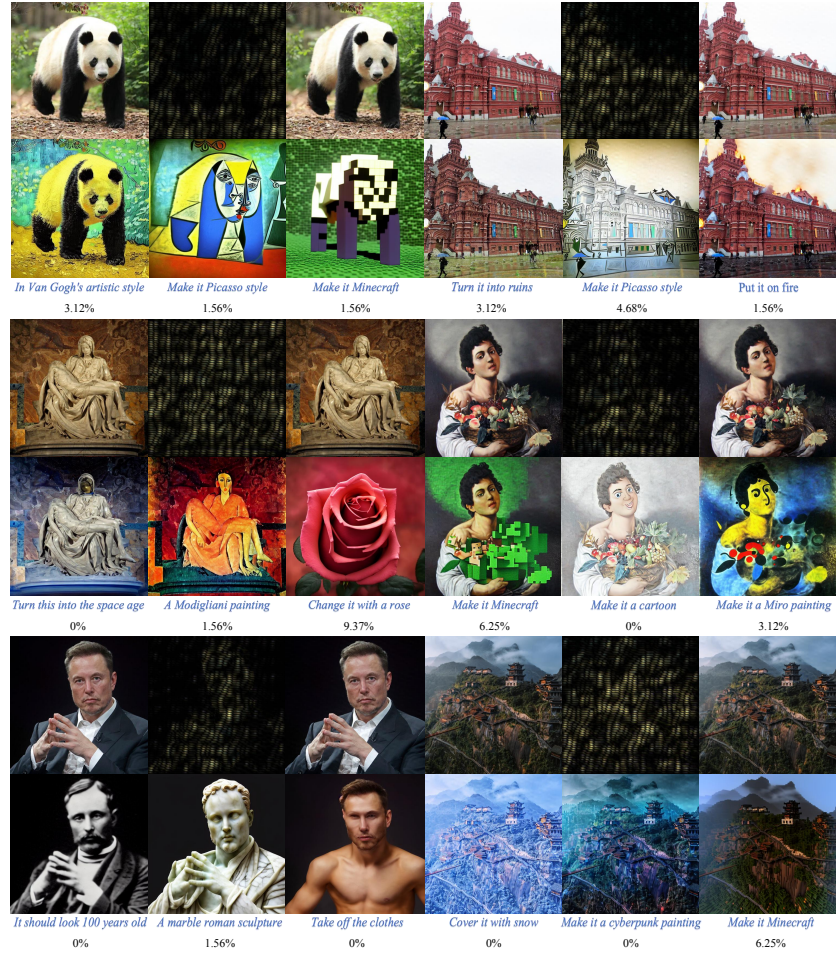


Fig. 2: More visual examples from real-world images of six types, namely, animal, architecture, object, painting, person, and scenery. For each, the first row shows Original, Normalized Residual, and Watermarked Images and the second row shows Edited Images with the corresponding instructions, while BER is noted below.

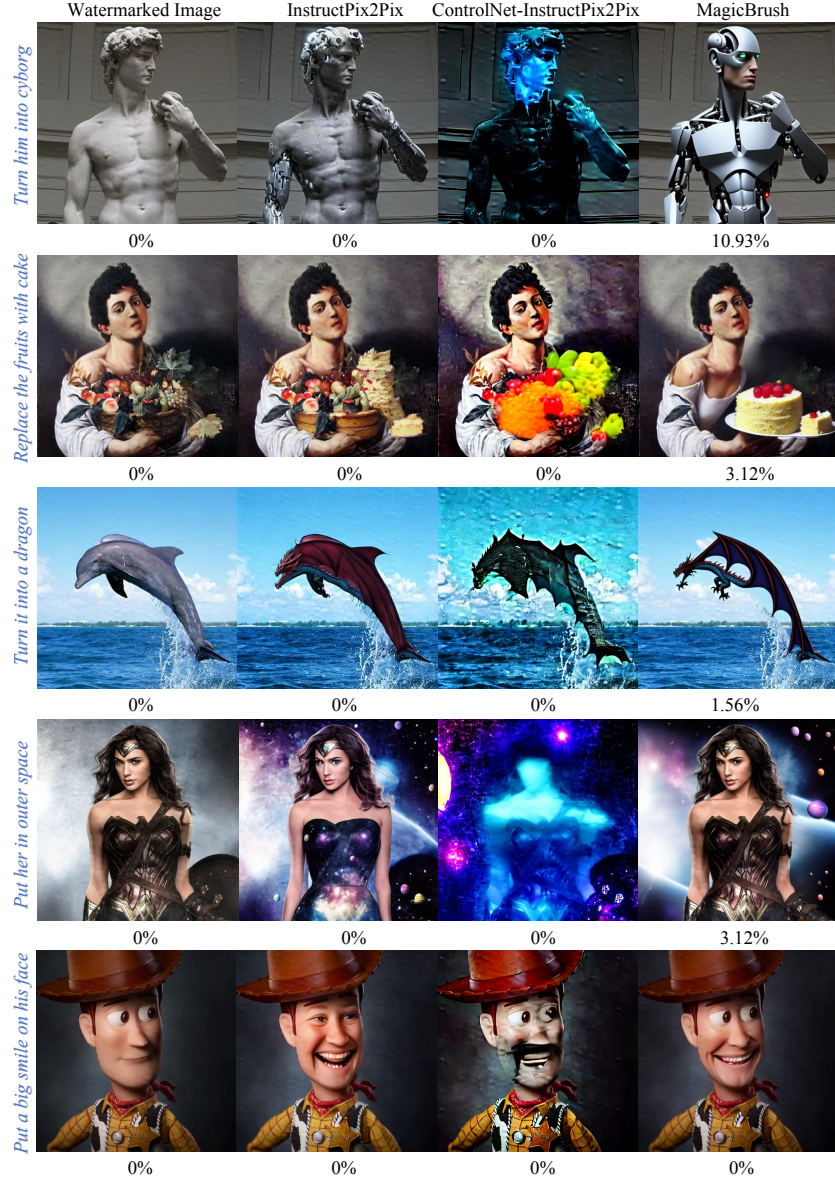


Fig. 3: More visual examples of our robustness against different instruction-driven image editing methods.

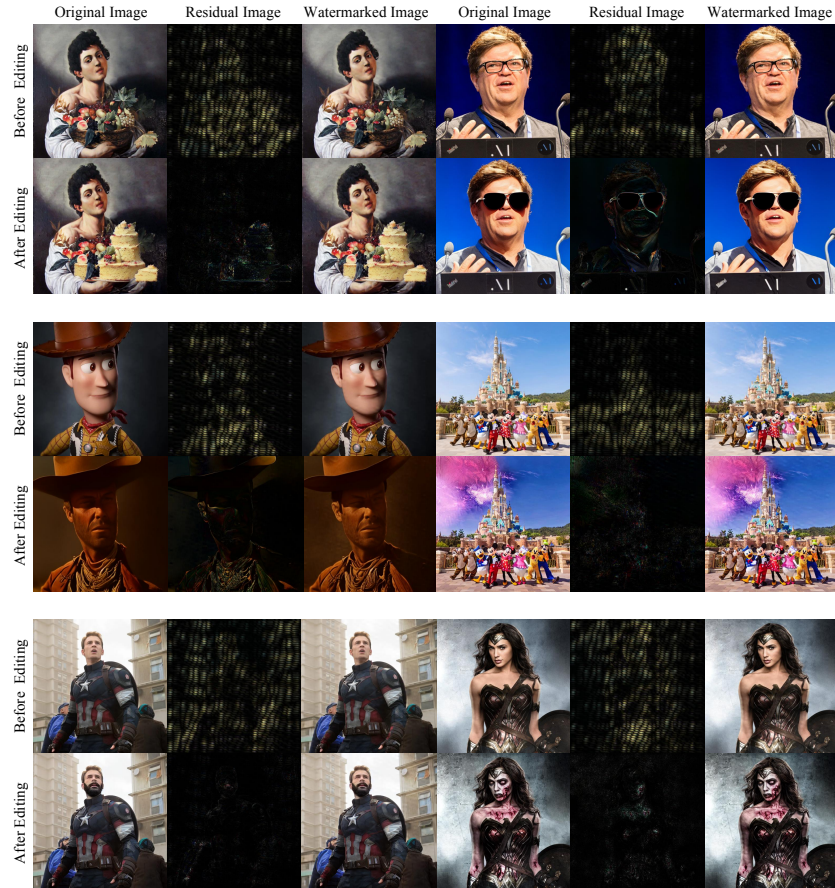


Fig. 4: More visual examples of Robust-Wide’s extracting mode.