



Project page



Semi-supervised Parametric Real-world Image Harmonization

Ke Wang^{1,2}, Michaël Gharbi¹, He Zhang¹, Zhihao Xia¹, Eli Shechtman¹
¹Adobe Inc. ²UC Berkely, EECS

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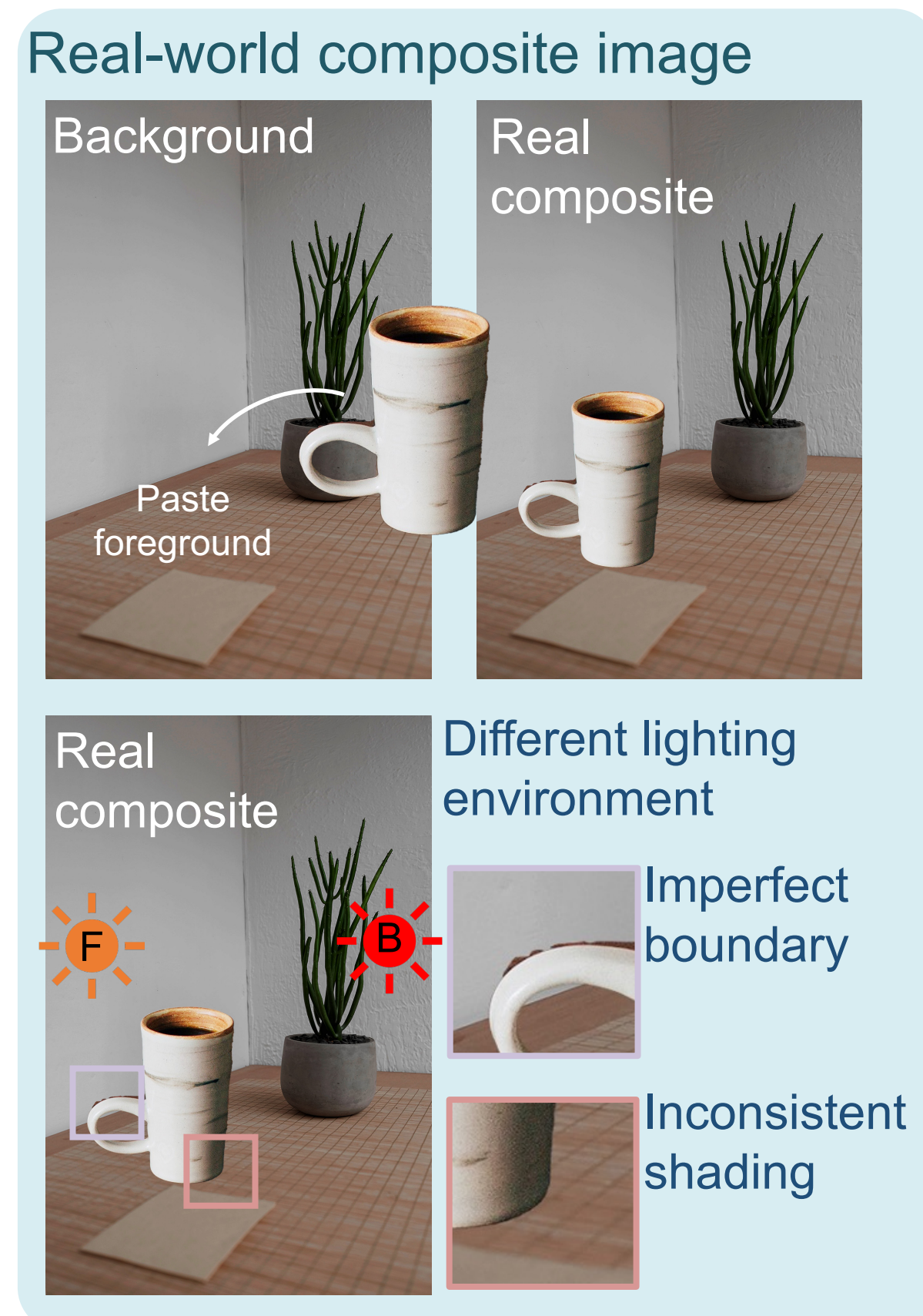
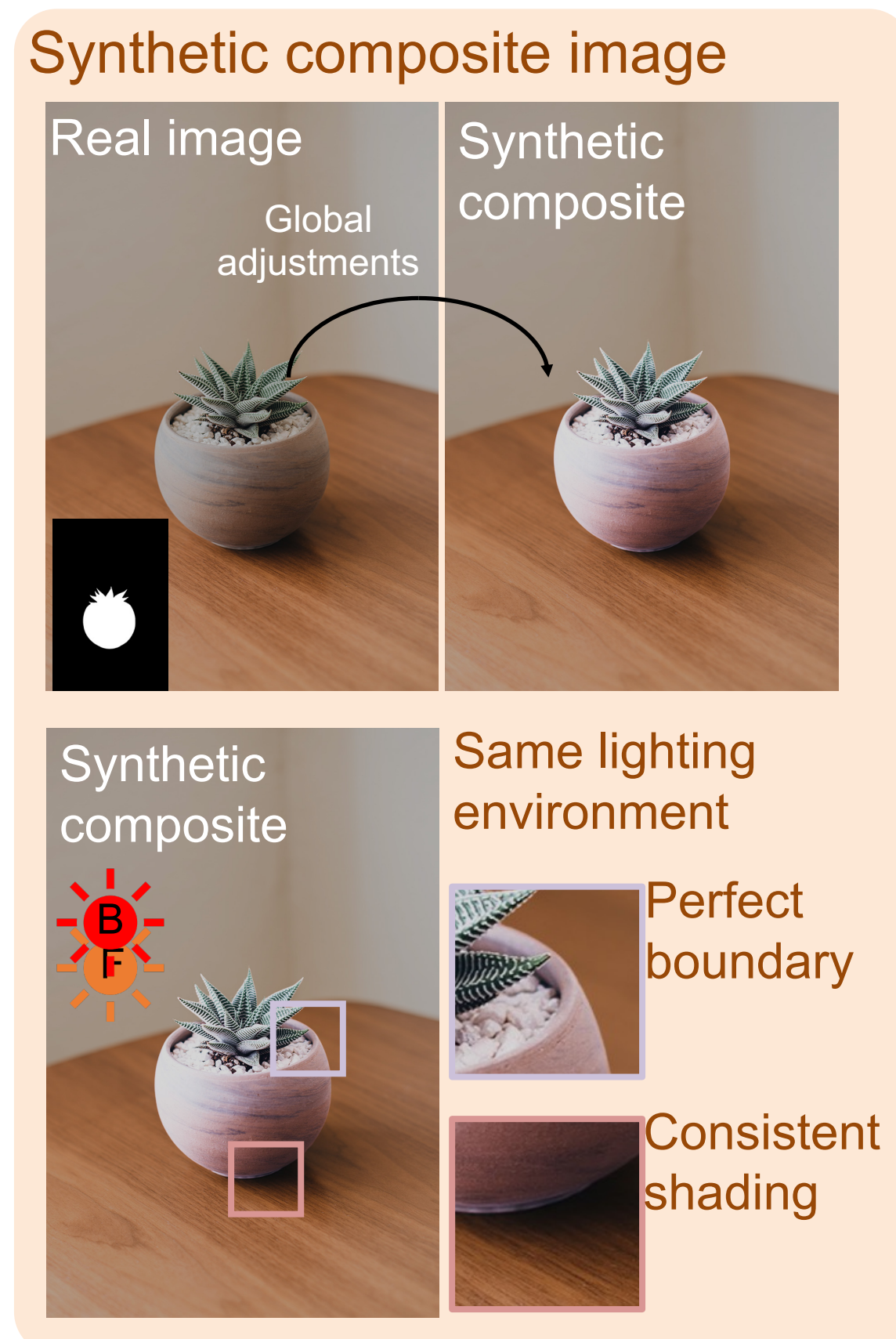


Domain gap in image harmonization

Existing approaches learn image harmonization with **synthetic composites**.

During Training

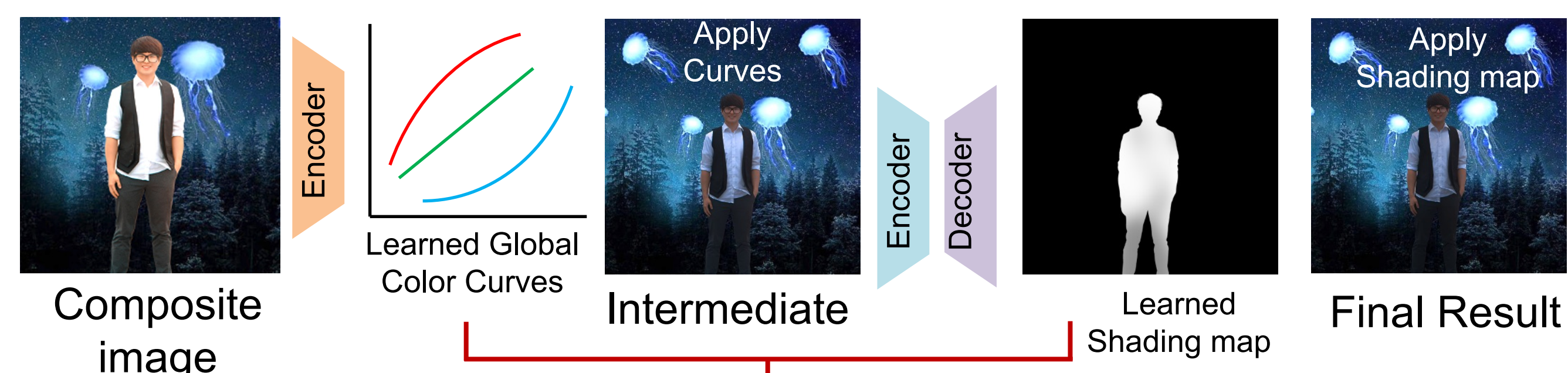
During Testing



Our contributions:

- Bridge the domain gap through training on **real composites**.
- First approach modeling local effect through novel **shading map**.
- High-resolution image harmonization with **full parametric controls**.

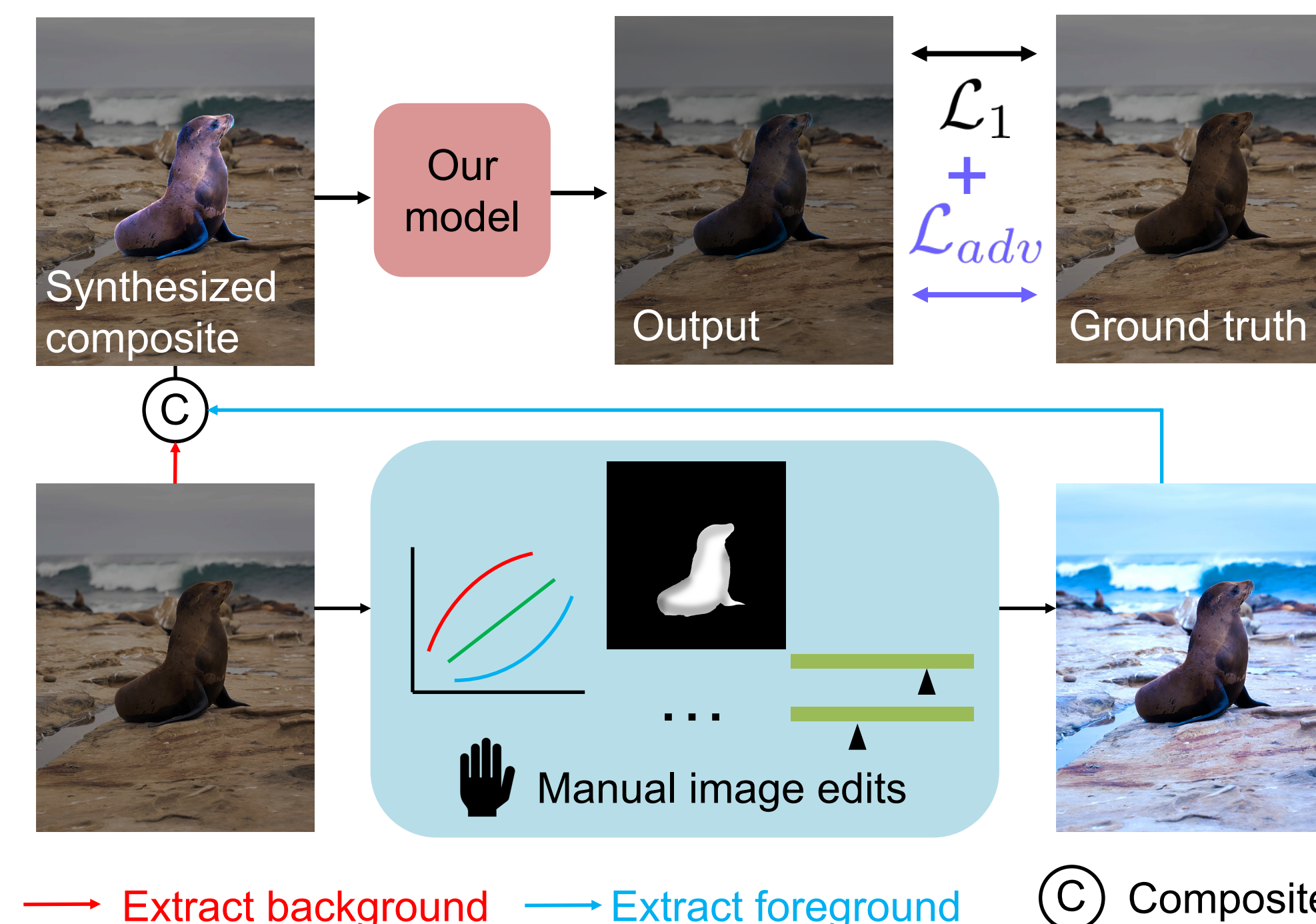
High-resolution parametric model



Color curves and shading map can scale up to any resolution

Dual-stream training on Artist-retouched dataset

Stream 1: Supervised training on *Artist-retouched* dataset



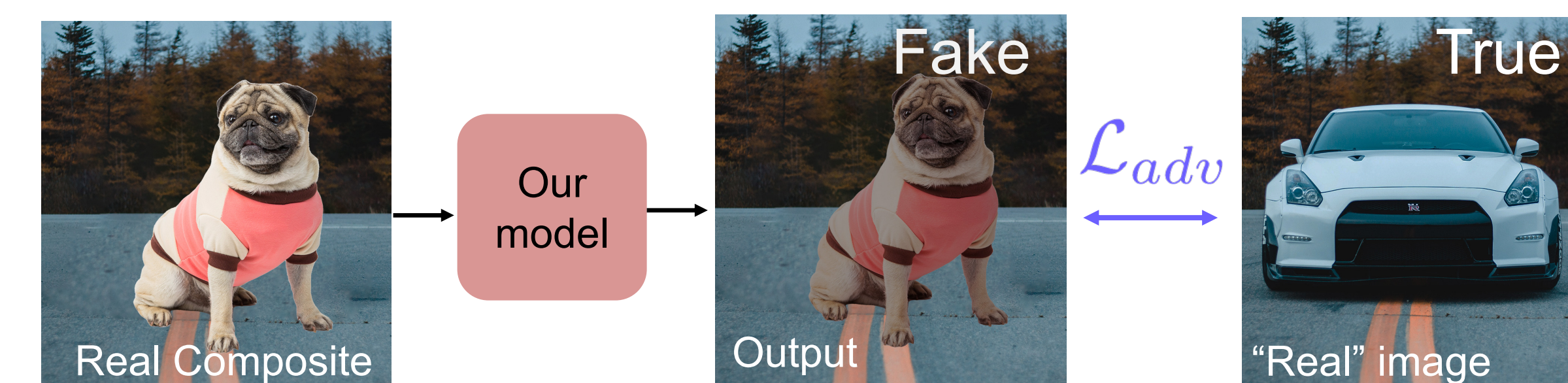
Previous dataset

- Unrealistic adjustments ✗
- Only global adjustments ✗

Artist-retouched dataset

- Realistic human manual image adjustments. ✓
- Editing with both global and local adjustments ✓

Stream 2: Unsupervised training on **real composite images**

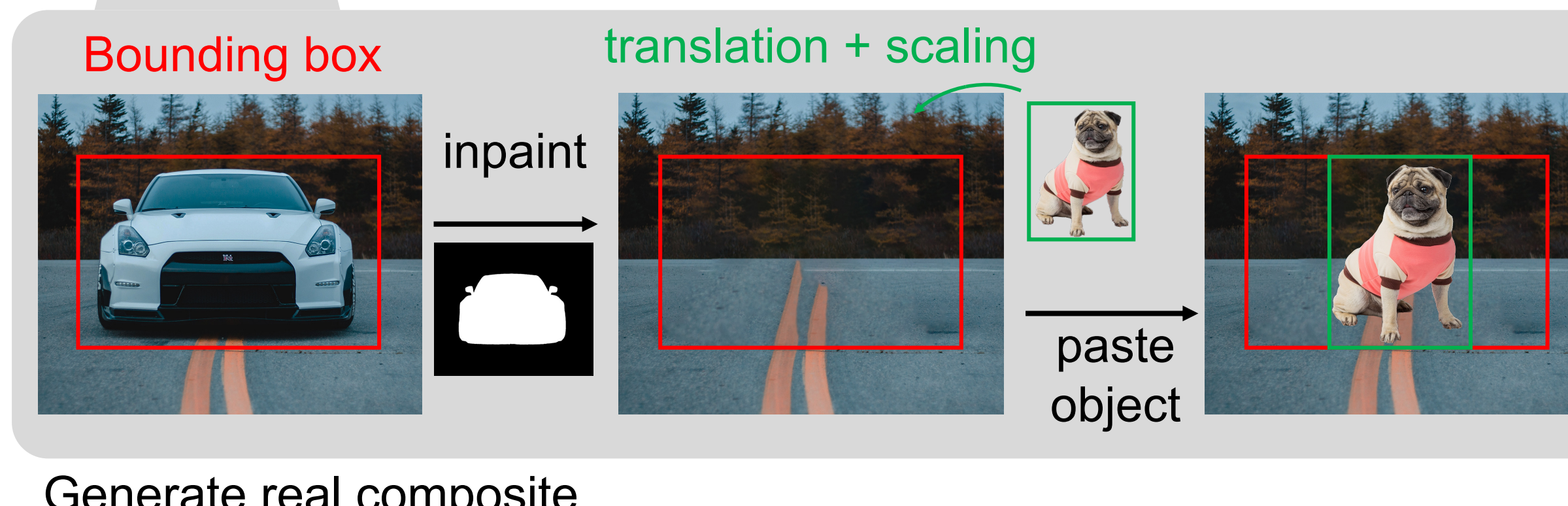


Previous works

- Only on synthetic images ✗
- Not local harmonization ✗

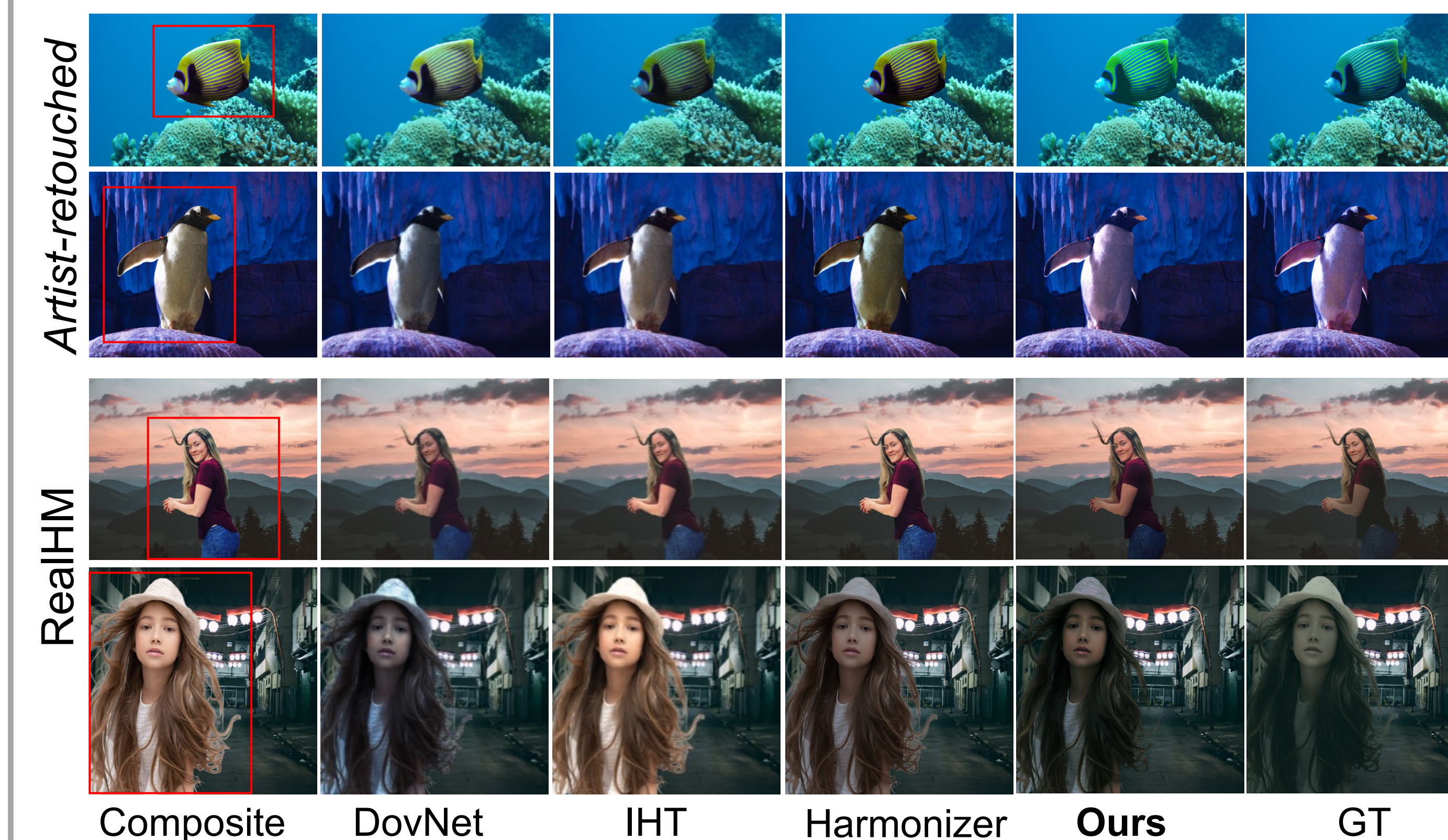
Our approach

- On both synthetic and real composite images. ✓
- Parametric model regularizes GAN training. ✓
- Perform both global and local harmonization. ✓



Stream 1 and 2 are equally sampled during our training process

Image harmonization results



Results of parametric controls

