

# ETNet: Error Transition Network for Arbitrary Style Transfer

Chunjin Song<sup>\*1</sup> ZhiJie Wu<sup>\*1</sup> Yang Zhou<sup>1</sup> Minglun Gong<sup>2</sup> Hui Huang<sup>1</sup>

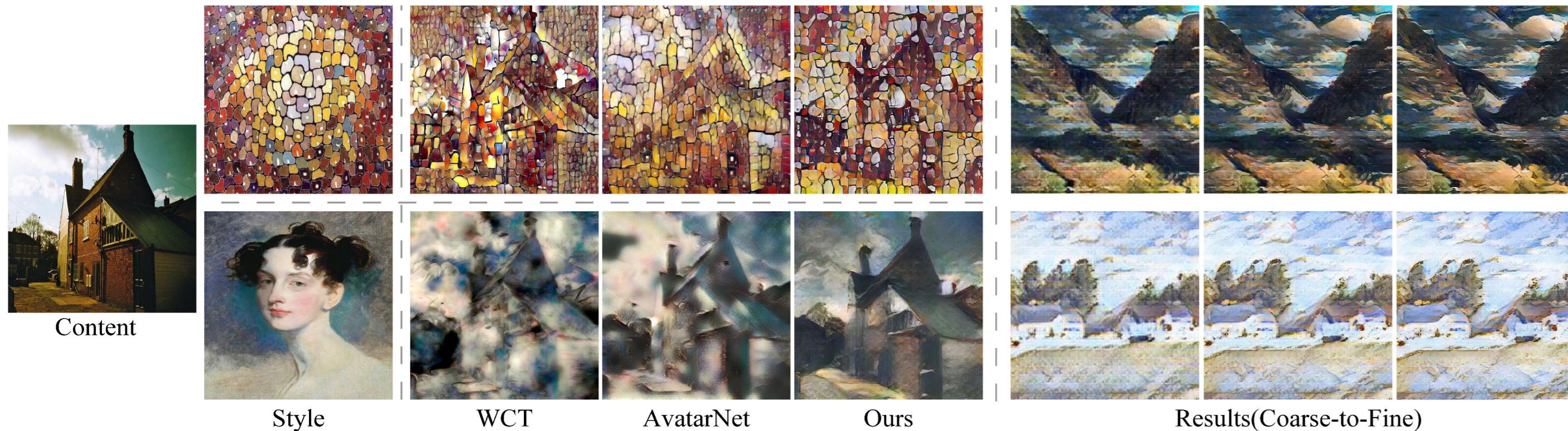
(1) Shenzhen University

(2) University of Guelph

\* equal contribution

## 1. OVERVIEW

**"Achieve arbitrary style transfer through iterative error-correction"**

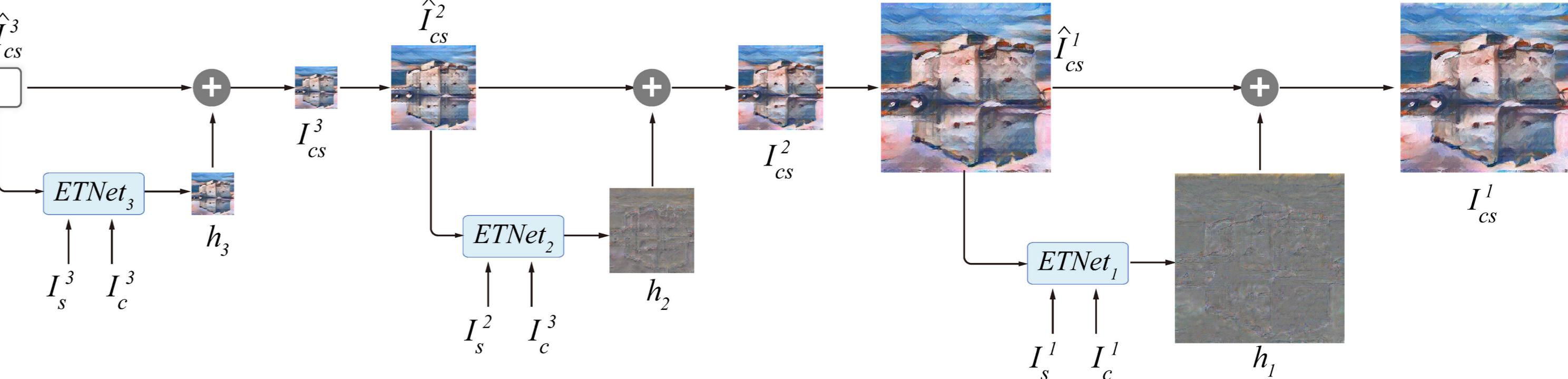


## CONTRIBUTIONS

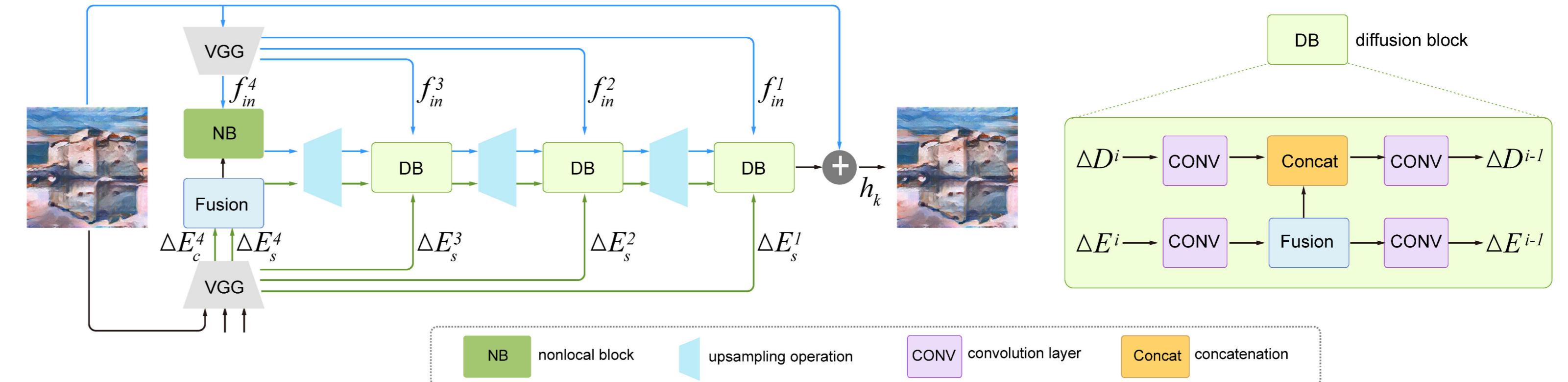
- First introduce the concept of error-correction mechanism to style transfer. Evaluate errors in stylization results and correcting them iteratively.
- Formulate each refinement as an error diffusion process. Explicitly computing the features for perceptual loss.
- Perform arbitrary style transfer and synthesize highly detailed results with favored styles.

## 2. METHOD

1. Our method achieves arbitrary style transfer through several coarse-to-fine refinements.

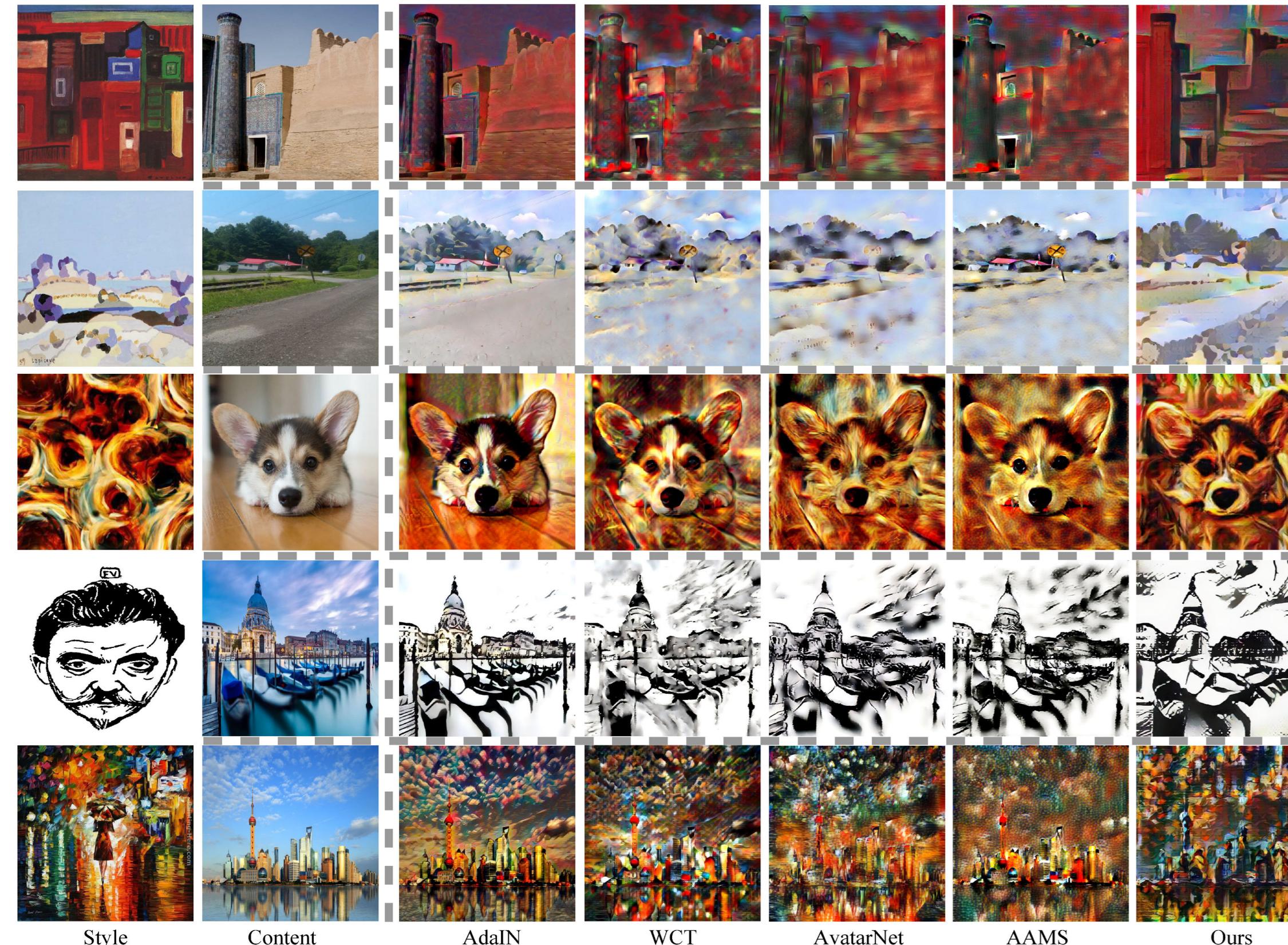


2. In each refinement, we compute errors in a feed-forward manner and propagate them among both the spatial and scale domain for a residual image.

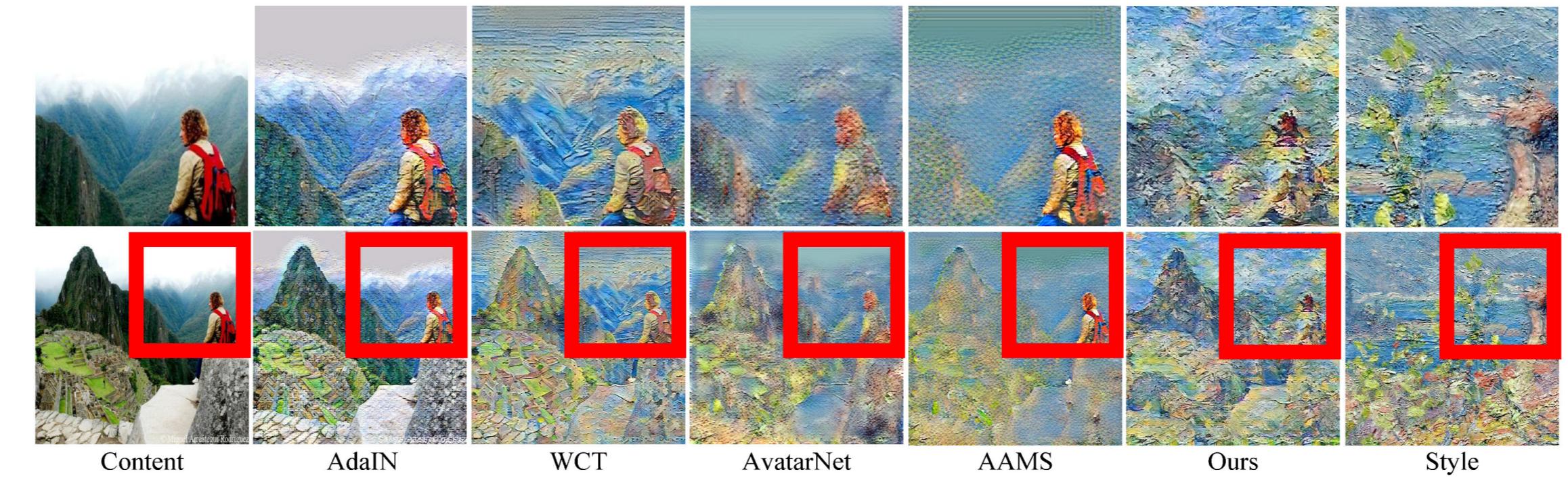


## 3. RESULT

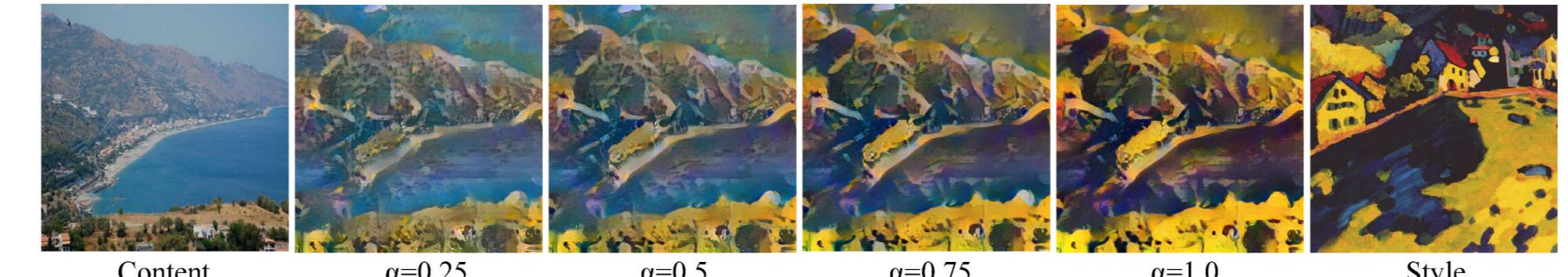
### Comparison with results from different methods



### Detail cut-outs



At deployment stage, we can adjust the degree of stylization with parameter  $\alpha$



A refinement for the outputs of AdaIN and WCT



### Stylization matrix of applying different styles to different content images

