Super-Resolution

Prior Work and Proposed Solution

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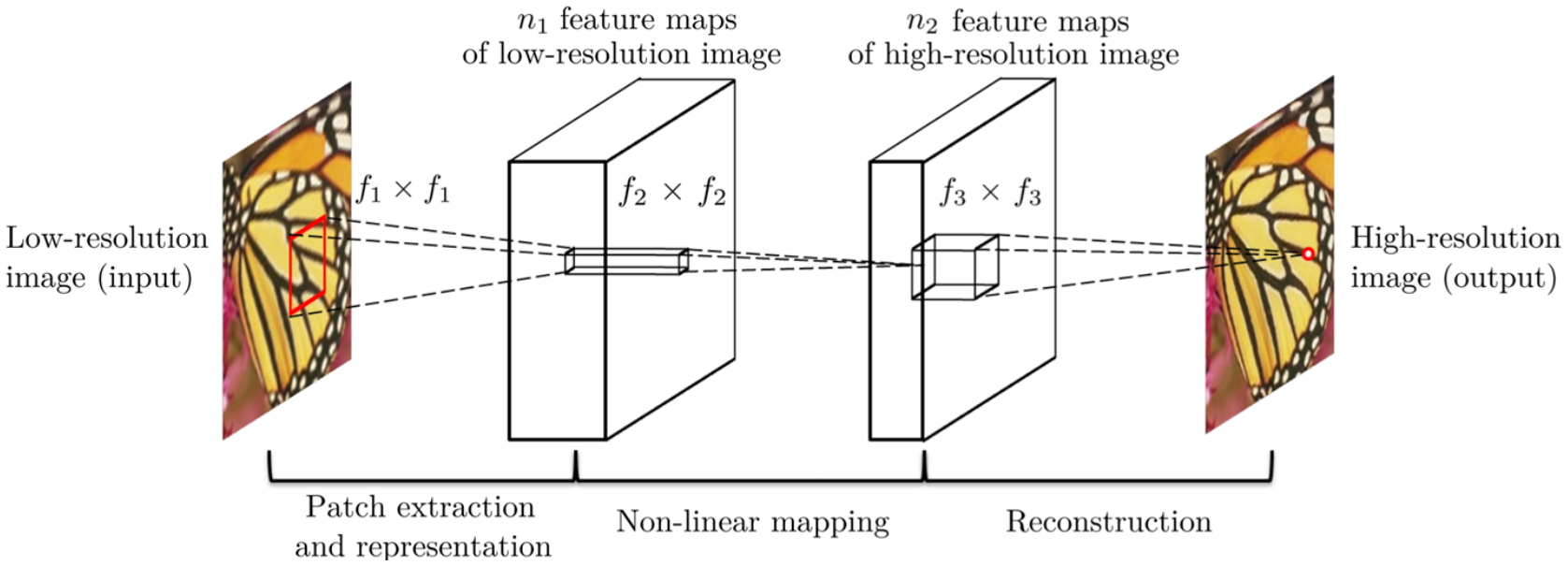
Prior Work

- SRCNN (Chao Dong et al., 2015)

  Patch extraction, non-linear mapping, reconstruction

  3 Conv. layers with ReLUs

  Upscale factor 3

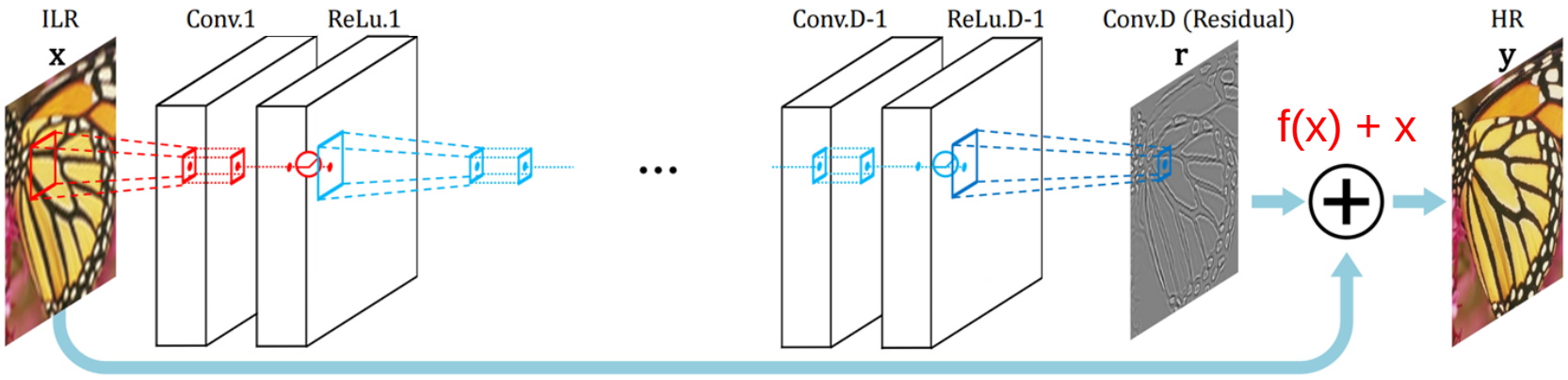


Prior Work

- Accurate Image Super-Resolution Using Very Deep Convolutional Networks (Jiwon Kim et al., 2016)

  Interpolate first

  Input + Residual = Output



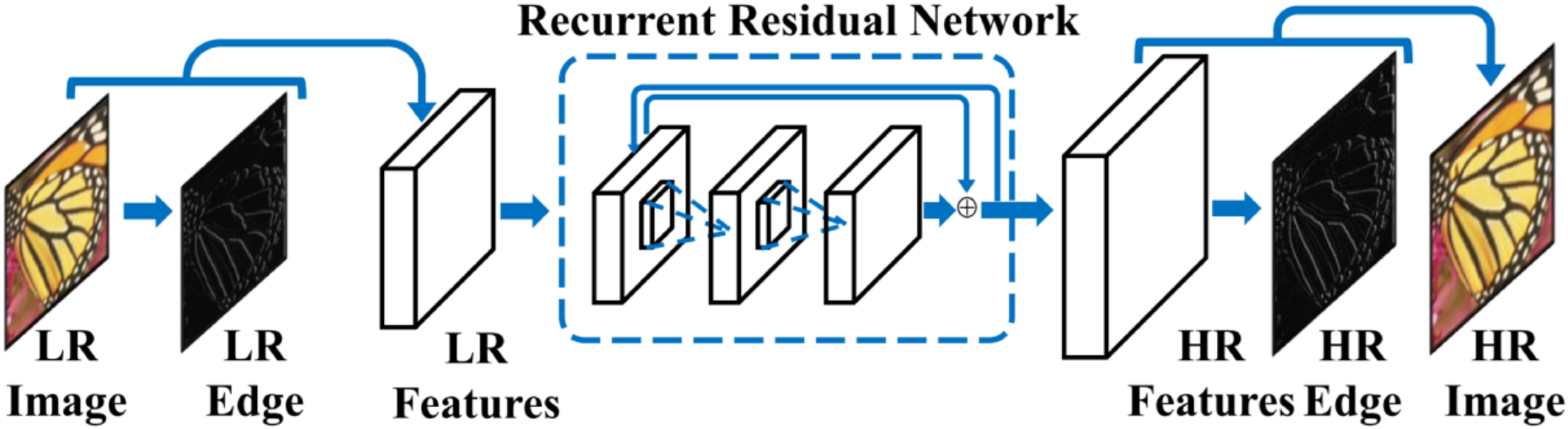
Prior Work

- Deep Edge Guided Recurrent Residual Learning for Image Super-Resolution (Wenhan Yang et al., 2016)

  Feed output back to input in next iteration

  Progressive residual learning

  Apply same conv. multiple times

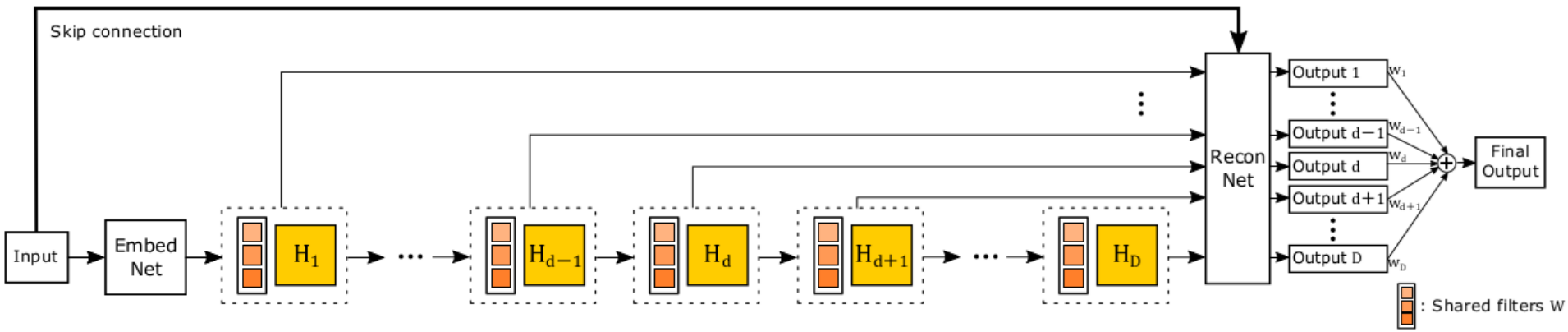


Prior Work

- Deeply-Recursive Convolutional Network for Image Super-Resolution (Jiwon Kim et al.)

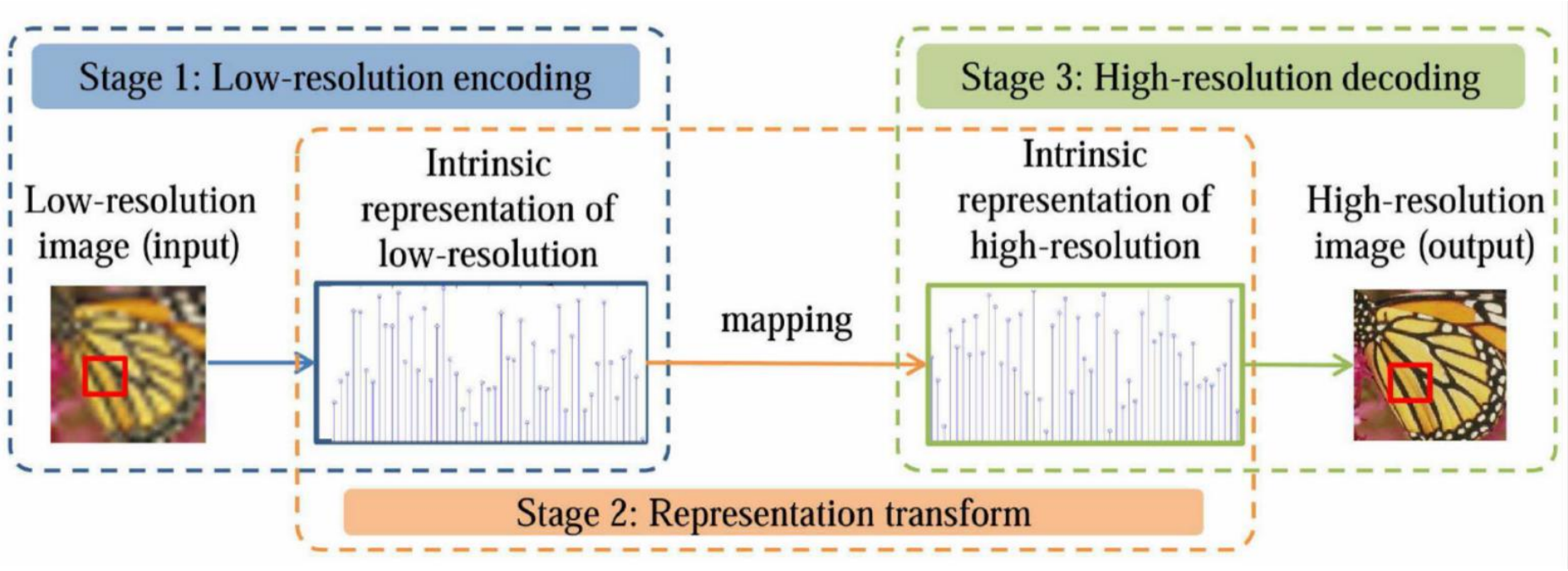
  Similar as before, with skip connections

  Use all outputs of iterations for reconstruction

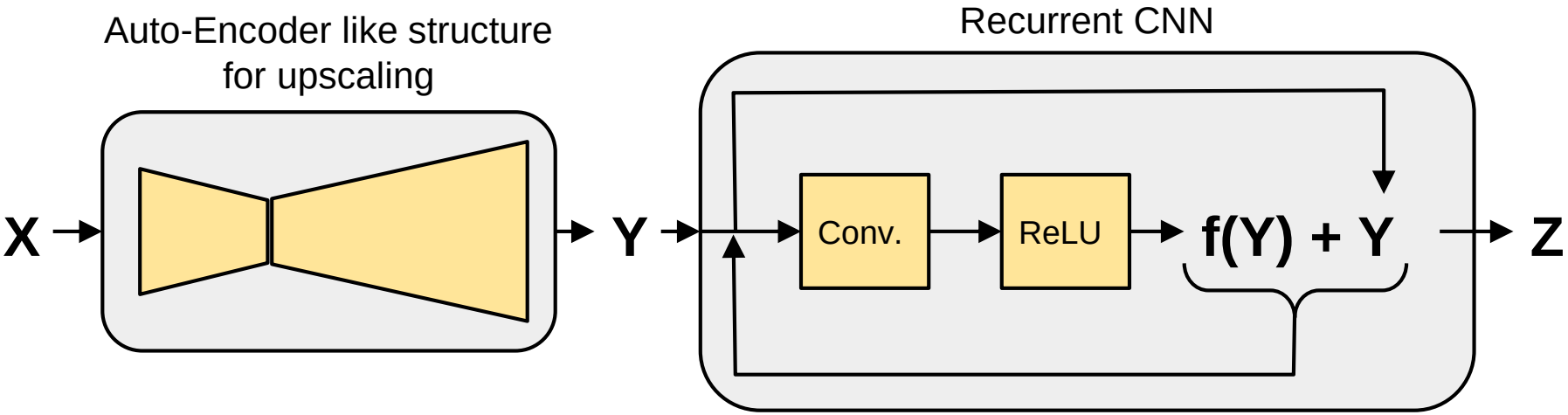


Prior Work

- Coupled Deep Autoencoder for Single Image Super-Resolution (Kun Zeng et al., 2015)



Our Proposed Solution



X: Low resolution input

Y: Intermediate upscaling result

Z: High resolution output

Possible Modifications