Ensemble Based Deep Networks for Image Super-Resolution

Zehao Huang, Lingfeng Wang, Yongchao Gong, Chunhong Pan

PII: S0031-3203(17)30090-0
DOI: 10.1016/j.patcog.2017.02.027
Reference: PR 6064

To appear in: *Pattern Recognition*

Received date: 22 July 2016
Revised date: 6 January 2017
Accepted date: 22 February 2017

Please cite this article as: Zehao Huang, Lingfeng Wang, Yongchao Gong, Chunhong Pan, Ensemble Based Deep Networks for Image Super-Resolution, *Pattern Recognition* (2017), doi: 10.1016/j.patcog.2017.02.027

Highlights

- We suggest a general and simple method to improve the performance of learning-based image super-resolution methods by using the ensemble of multiple models to reconstruct high-resolution results.
- We focus on Sparse Coding Network (SCN) and propose a new state-of-the-art method named Ensemble based Sparse Coding Network (ESCN).
- A back-projection method is introduced to solve the weights of different ensemble models.
- We accelerate the training of SCN (about 120x faster) by using batch normalization.