

# Blind Deblurring Using Internal Patch Recurrence

**Visual results with full-sized images**

Tomer Michaeli & Michal Irani  
ECCV 2014

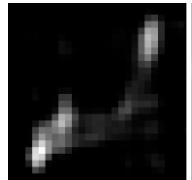
# Blurry Input Image

62\_4



# Deblurring with Ground-Truth Kernel



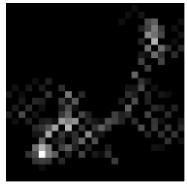


Our



Error ratio: 2.73

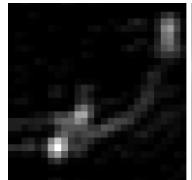




Sun *et al.*

Error ratio: 10.27

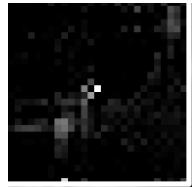




Xu & Jia

Error ratio: 9.65

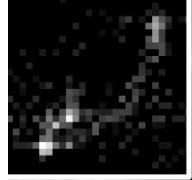




*Levin et al.*

Error ratio: 10.52

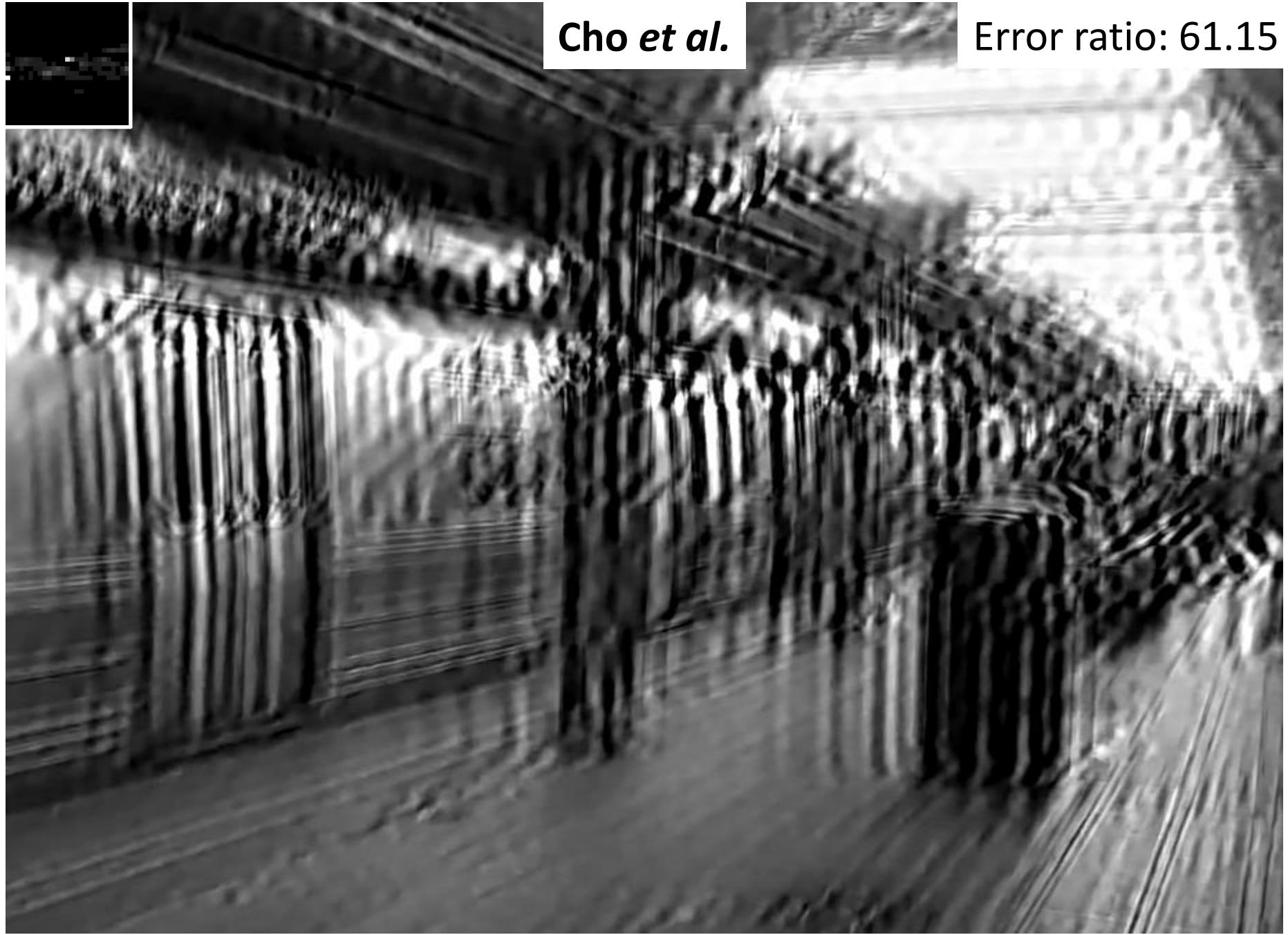




Cho & Lee

Error ratio: 11.01





*Cho et al.*

Error ratio: 61.15



Krishnan *et al.*

Error ratio: 24.19

# Blurry Input Image

39\_6



# Deblurring with Ground-Truth Kernel



Our

Error ratio: 4.26



**Sun *et al.***

Error ratio: 6.45



Xu & Jia

Error ratio: 16.99



**Levin *et al.***

Error ratio: 20.30



**Cho & Lee**

Error ratio: 33.52



*Cho et al.*

Error ratio: 6.24



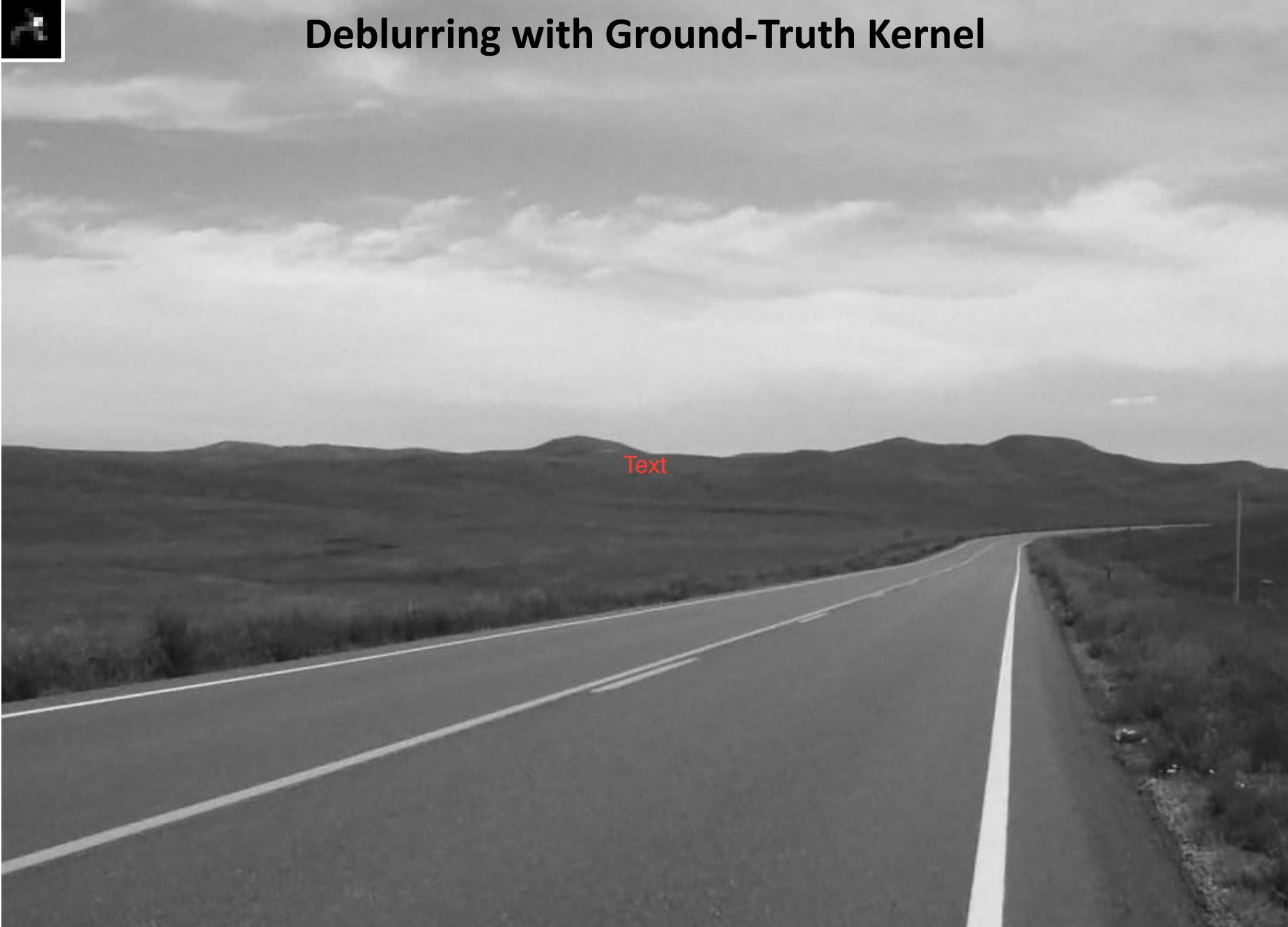


# Blurry Input Image

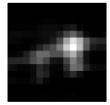
35\_5



# Deblurring with Ground-Truth Kernel



Text



Our

Error ratio: 3.52

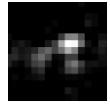




**Sun et al.**

Error Ratio: 7.01

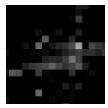




Xu & Jia

Error ratio: 11.50

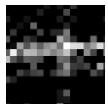




**Levin *et al.***

Error ratio: 15.56



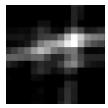


Cho & Lee

Error ratio: 59.32







Krishnan *et al.*

Error ratio: 18.32



# Blurry Input Image



# Deblurring with Ground-Truth Kernel



Our

Error ratio: 3.17















# Blurry Input Image

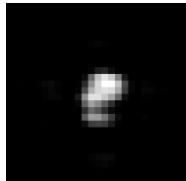


10\_3



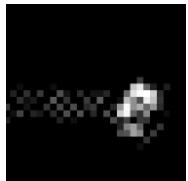
# Deblurring with Ground-Truth Kernel





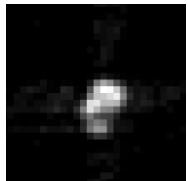
Our

Error ratio: 1.90



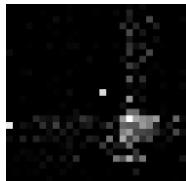
**Sun et al.**

Error ratio: 8.87



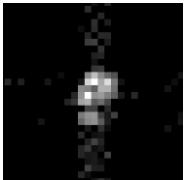
Xu & Jia

Error ratio: 6.07



**Levin *et al.***

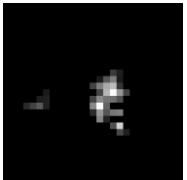
Error ratio: 14.20



Cho & Lee

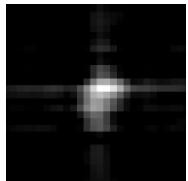


Error ratio: 12.42



**Cho et al.**

Error ratio: 4.19



Krishnan *et al.*



Error ratio: 11.60

# Blurry Input Image



# Deblurring with Ground-Truth Kernel



Our

Error ratio: 2.24



**Sun *et al.***

Error ratio: 3.15



Xu & Jia

Error ratio: 16.66



**Levin *et al.***

Error ratio: 3.09



Cho & Lee

Error ratio: 34.85



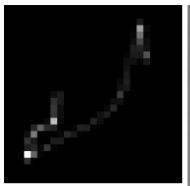
**Cho *et al.***

Error ratio: 18.24





# Our Worst Result



# Blurry Input Image





Our

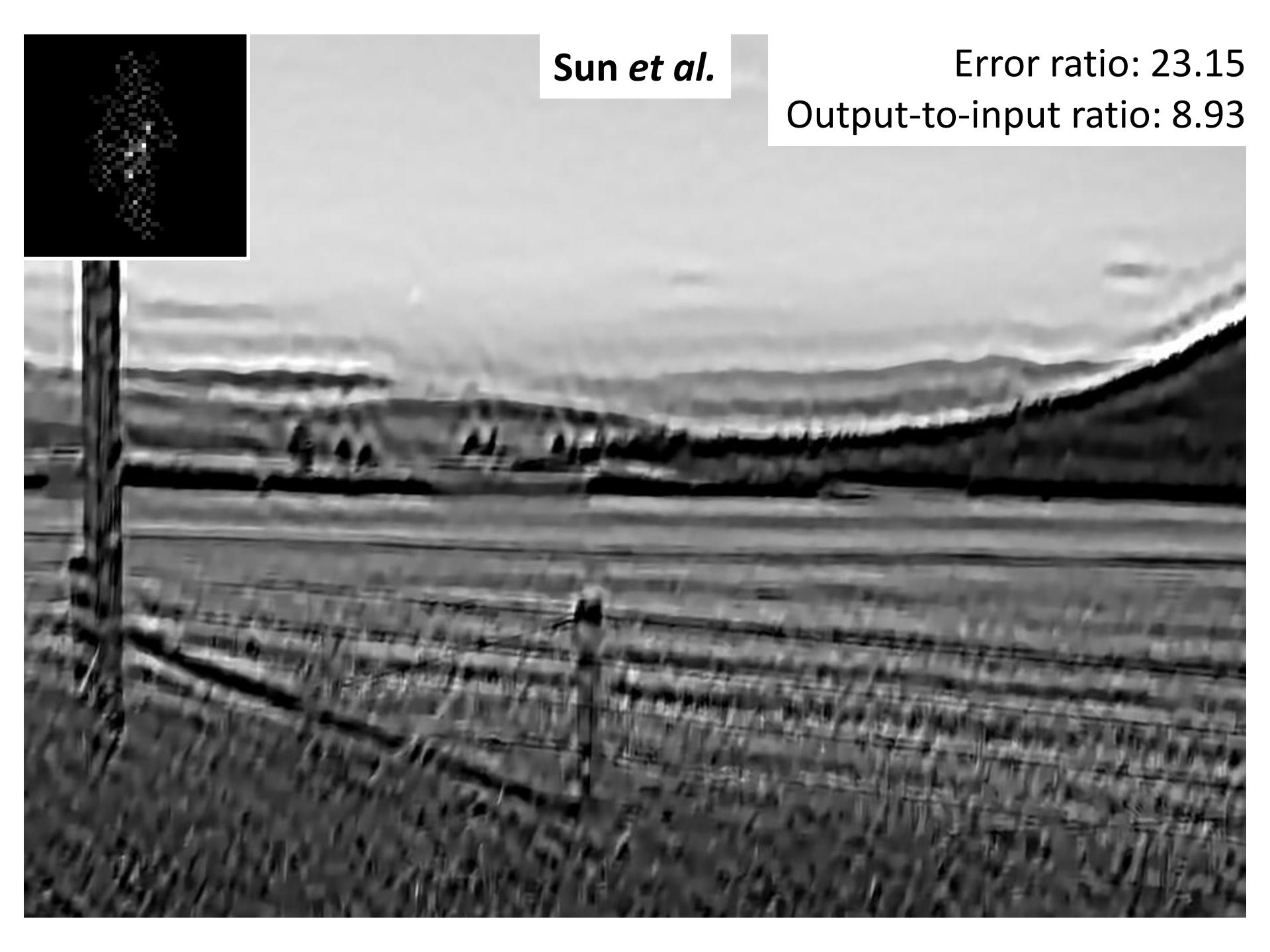
Error ratio: 9.23

Output-to-input ratio: 0.93

The Worst Result of Sun *et al.*



**Blurry Input Image**

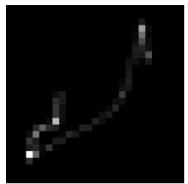


**Sun *et al.***

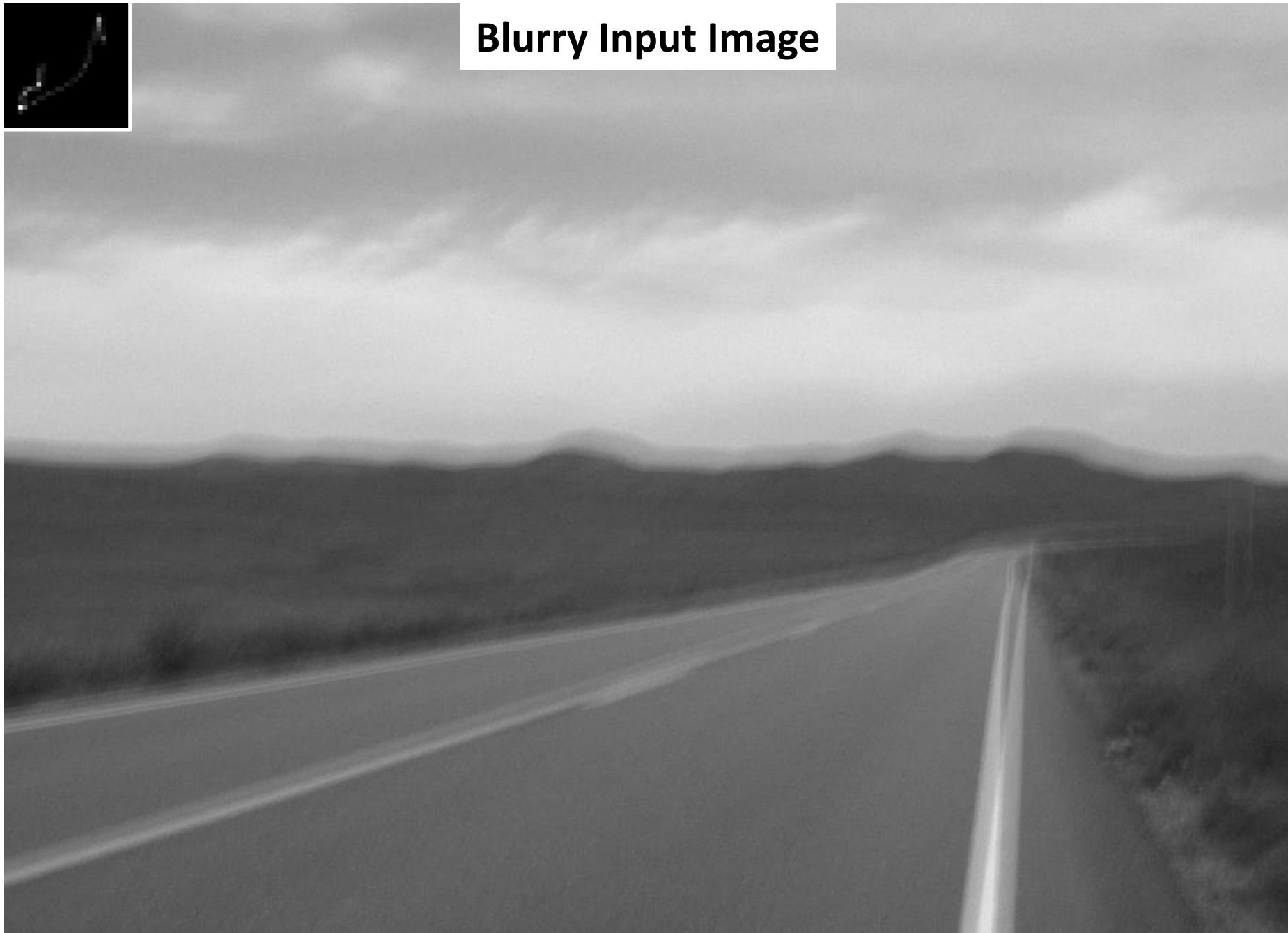
Error ratio: 23.15

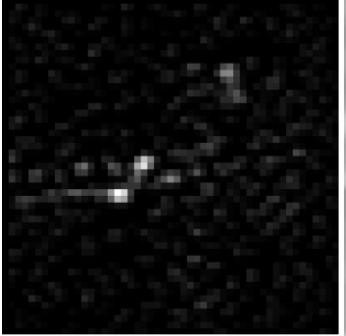
Output-to-input ratio: 8.93

# The Worst Result of Xu & Jia



# Blurry Input Image

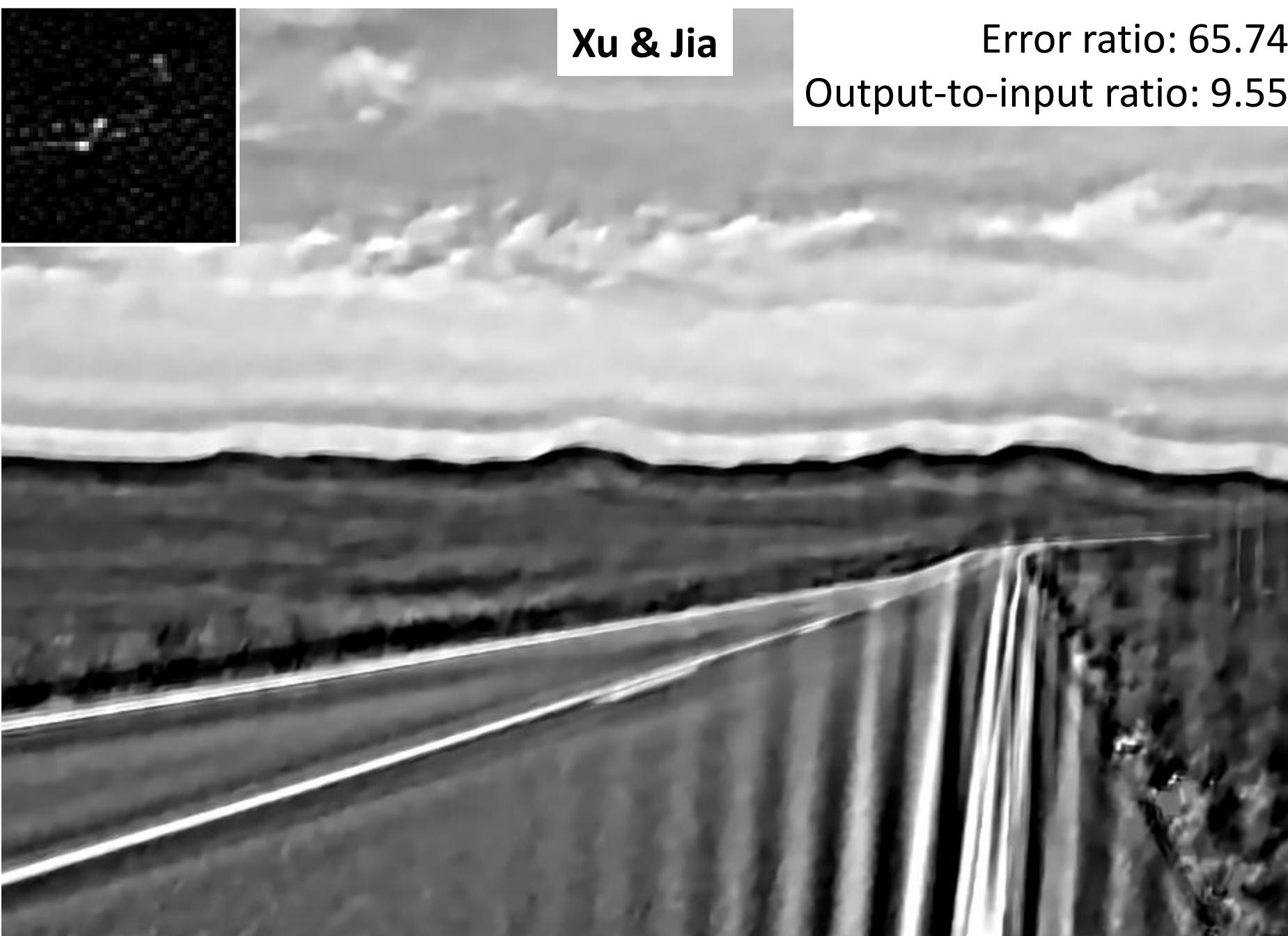




Xu & Jia

Error ratio: 65.74

Output-to-input ratio: 9.55



The Worst Result of Levin *et al.*

# Blurry Input Image



**Levin *et al.***

Error ratio: 41.23

Output-to-input ratio: 8.69

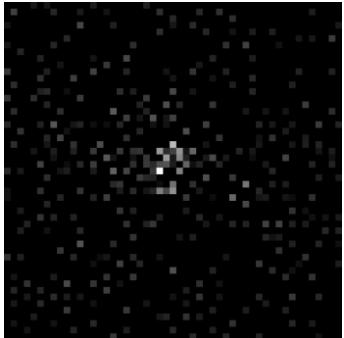


# The Worst Result of Cho & Lee



## Blurry Input Image





Error ratio: 112.6  
Output-to-input  
ratio: 37.24

The Worst Result of Cho *et al.*

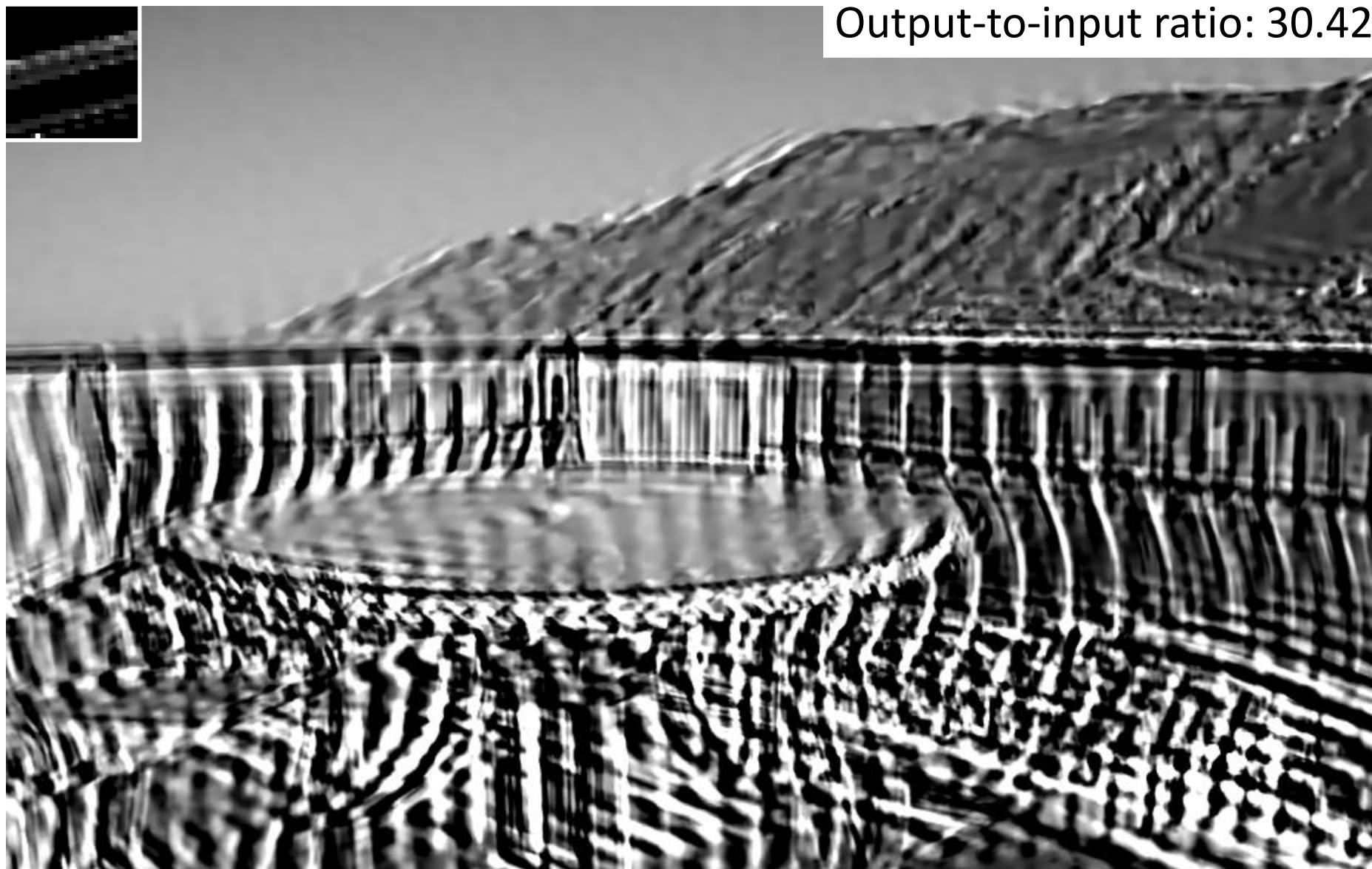
# Blurry Input Image



*Cho et al.*

Error ratio: 165.57

Output-to-input ratio: 30.42

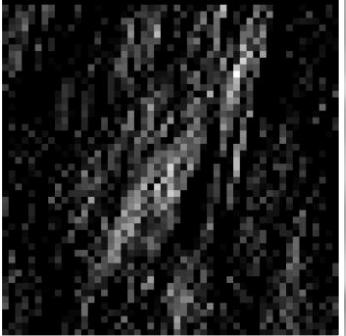


The Worst Result of Krishnan *et al.*



## Blurry Input Image





Krishnan *et al.*

Error ratio: 133.65

Output-to-input  
ratio: 48.88

