

Compressed data
Measurement (Y)

y_0
 y_1
 y_2
 y_3
 y_4
 y_5
 y_6
 y_7
 $M \times 1$

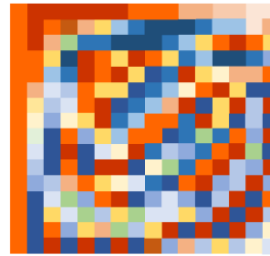
To reconstruct

NP-hard problem

Original vector
signal X

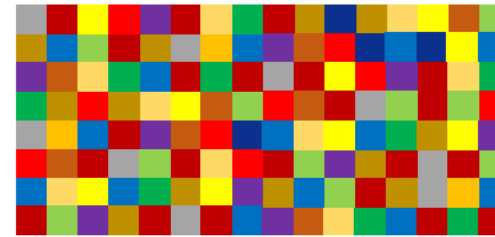
x_0
 x_1
 x_2
 x_3
 x_4
 x_5
 x_6
 x_7
 x_8
 x_9
 x_{10}
 x_{11}
 x_{12}
 x_{13}
 x_{14}
 x_{15}
 $N \times 1$

Transform matrix



$N \times N$

Measurement matrix



$M \times N$

Incoherence

Sparse

$\hat{\theta}$

s_0
 s_1
 s_2
 s_3
 s_4
 s_5
 s_6
 s_7
 s_8
 s_9
 s_{10}
 s_{11}
 s_{12}
 s_{13}
 s_{14}
 s_{15}

$N \times 1$

Transform domain

- S is the count of non-zero numbers in the vector
- $S \ll M < N$

