

Sparse Coding Minimizing ℓ_0 : Matching Pursuit Variants

**Mathematical Models and Methods for Image
Processing**

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Assignment

Matching Pursuit Variants

Implement all the variants of the Matching Pursuit

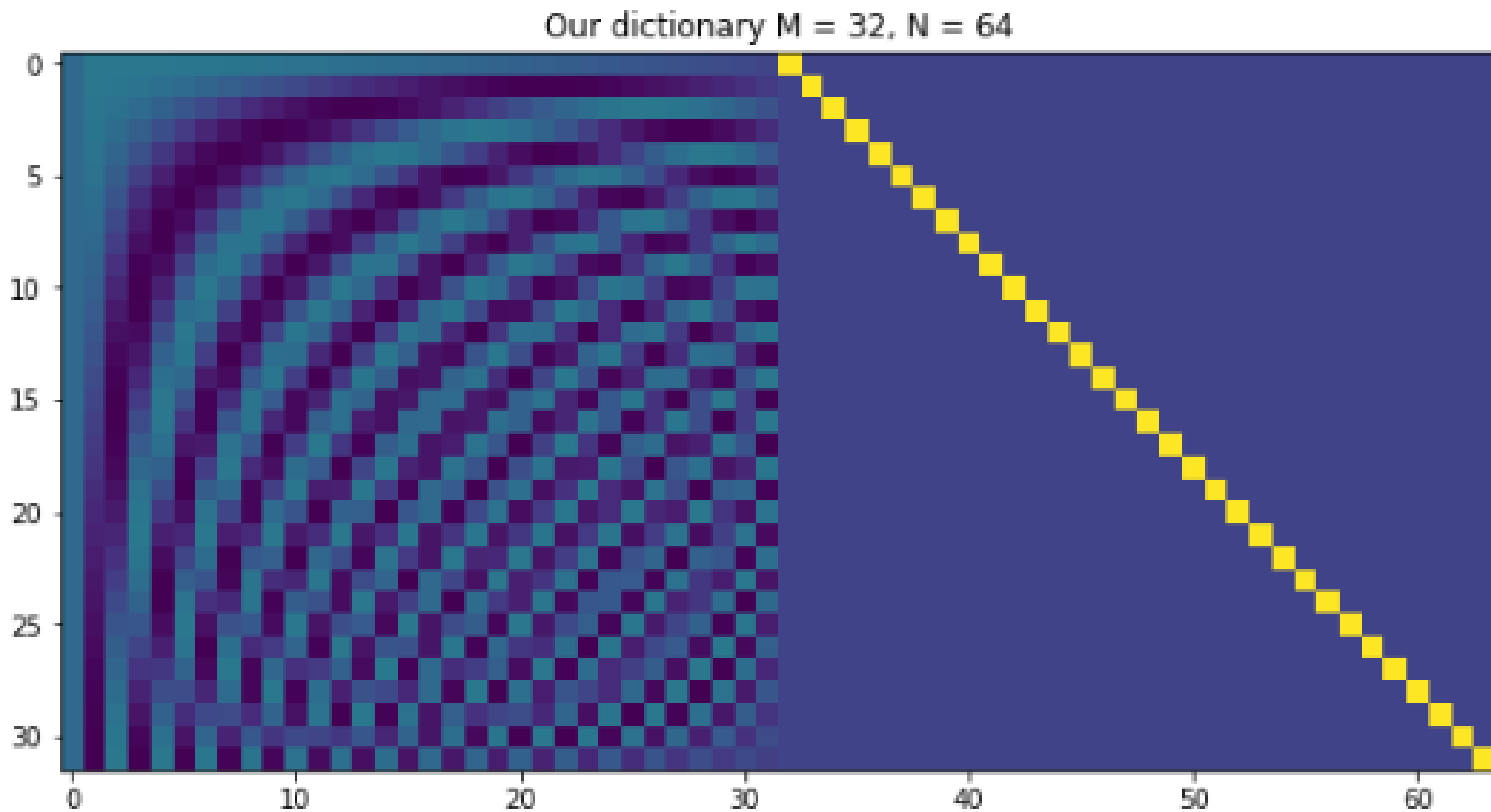
Take the setup of Assignment 7

- Implement OMP and LSOMP to solve

$$\hat{\mathbf{x}} = \underset{\mathbf{x} \in \mathbb{R}^M}{\operatorname{argmin}} \|\mathbf{x}\|_0 \quad \text{s.t.} \quad D\mathbf{x} = \mathbf{s}$$

- Where $D = [DCT, C]$ and \mathbf{s} is an L –sparse signal w.r.t DCT and 1 –sparse signal w.r.t. the canonical basis C

The Dictionary



The Signal and Coefficients

