Compressive Sensing in Signal Reconstruction

Reconstruction Engine
- RVM
  - Cascaded RVM
- POCS
- Deterministic Compressive Sensing
  - OMP
  - SPGL1
  - etc

Basis Function
- Discrete Wavelet Transform
  - Daubechies Wavelets
  - Haar Wavelets
- Cepstrum (for speech signals)
- Discrete Fourier Transform
- Discrete Cosine Transform

Input
- Simulate Corrupted Signal
  - Unstructured
  - Structured
- Undersampled Signal
  - 1D (e.g. Sound)
  - 2D (e.g. images)
  - 3D (e.g. videos)
  - 4D
  - 5D

Output
- Error Bars
- Performance Measure
  - FSIM
  - Peak SNR
  - Mean Square Error
- Reconstructed Signal

Speed depends on
- Signal Size (-)
- Block Size (-)
- Reconstruction Algorithm
- Cascade Depth (-)
- Parallelization (blocks are independent)

Accuracy depends on
- Basis Function
- Block Size (+)
- Reconstruction Algorithm
- Cascade Depth (+)
- Level of Corruption