Speech Signal Reconstruction using Two-Step Iterative Shrinkage Thresholding Algorithm

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Abstract

The idea behind Compressive Sensing (CS) is the reconstruction of sparse signals from very few samples, by means of solving a convex optimization problem. In this paper we propose a compressive sensing framework using the Two-Step Iterative Shrinkage/Thresholding Algorithms (TwIST) for reconstructing speech signals. Further, we compare this framework with two other convex optimization algorithms, l1 Magic and Gradient Projection for Sparse Reconstruction (GPSR). The performance of our framework is demonstrated via simulations and exhibits a faster convergence rate and better peak signal-to-noise ratio (PSNR).

References


Index Terms
Computer Science
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Keywords

Compressive Sensing, Convex Optimization, Two-Step Iterative Shrinkage/Thresholding Algorithms, l1 Magic, Gradient Projection for Sparse Reconstruction