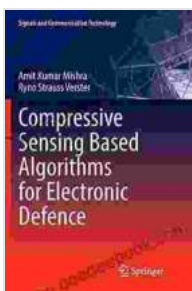


Compressive Sensing Based Algorithms For Electronic Defence Signals And

Compressive sensing (CS) is a signal processing technique that allows for the acquisition and reconstruction of signals from a small number of measurements. This is possible by exploiting the sparsity or compressibility of the signal in some domain. CS has found applications in a wide range of areas, including image and video processing, medical imaging, and radar.

In the field of electronic defence, CS can be used to process signals from radar, sonar, and other electronic warfare systems. These signals are often sparse or compressible, making them well-suited for CS techniques. CS can be used to improve the performance of these systems in a number of ways, such as by reducing the amount of data that needs to be processed, improving the signal-to-noise ratio, and increasing the resolution of the signal.

There are a number of different CS algorithms that can be used to process electronic defence signals. The choice of algorithm depends on the specific application and the characteristics of the signal. Some of the most common CS algorithms include:



Compressive Sensing Based Algorithms for Electronic Defence (Signals and Communication Technology)

by Irene Noguer

★★★★★ 5 out of 5

Language : English

File size : 8726 KB

Text-to-Speech : Enabled

Screen Reader : Supported



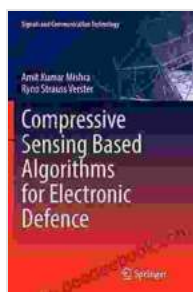
- **Matching pursuit (MP):** MP is a greedy algorithm that iteratively selects the most correlated measurement with the current estimate of the signal.
- **Orthogonal matching pursuit (OMP):** OMP is a variant of MP that uses a more sophisticated selection strategy to improve the performance of the algorithm.
- **Basis pursuit (BP):** BP is a convex optimization algorithm that solves the problem of finding the sparsest signal that fits the measurements.
- **Iterative reweighted least squares (IRLS):** IRLS is an iterative algorithm that solves the problem of finding the signal that minimizes the weighted least squares error.

CS has a number of potential applications in electronic defence, including:

- **Radar:** CS can be used to improve the performance of radar systems by reducing the amount of data that needs to be processed, improving the signal-to-noise ratio, and increasing the resolution of the signal.
- **Sonar:** CS can be used to improve the performance of sonar systems by reducing the amount of data that needs to be processed, improving the signal-to-noise ratio, and increasing the resolution of the signal.
- **Electronic warfare:** CS can be used to improve the performance of electronic warfare systems by reducing the amount of data that needs

to be processed, improving the signal-to-noise ratio, and increasing the resolution of the signal.

CS is a powerful signal processing technique that has the potential to revolutionize the field of electronic defence. CS can be used to improve the performance of radar, sonar, and other electronic warfare systems in a number of ways. As CS research continues to progress, we can expect to see even more innovative and groundbreaking applications of CS in the field of electronic defence.

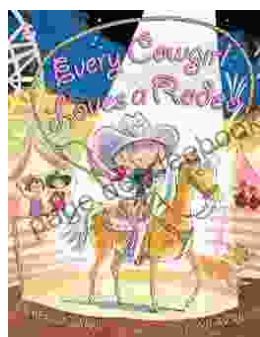


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