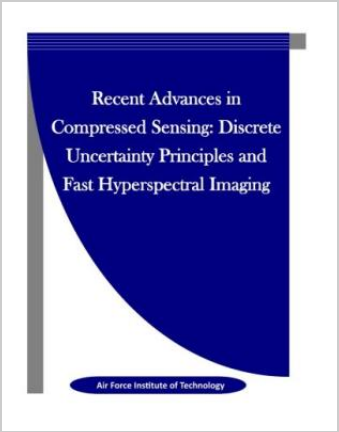

Recent Advances in Compressed Sensing: Discrete Uncertainty Principles and Fast Hyperspectral Imaging (Paperback)

By Air Force Institute of Technology

Createspace Independent Publishing Platform, United States, 2016. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****.Compressed sensing is an important eld with continuing advances in theory and applications. This book provides contributions to both theory and application. Much of the theory behind compressed sensing is based on uncertainty principles, which state that a signal cannot be concentrated in both time and frequency. We develop a new discrete uncertainty principle and use it to demonstrate a fundamental limitation of the demixing problem, and to provide a fast method of detecting sparse signals. The second half of this book focuses on a speci c application of compressed sensing: hyperspectral imaging. Conventional hyperspectral platforms require long exposure times, which can limit their utility, and so we propose a compressed sensing platform to quickly sample hyperspectral data. We leverage certain combinatorial designs to build good coded apertures, and then we apply block orthogonal matching pursuit to quickly reconstruct the desired imagery.

Reviews

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