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Nota di contenuto	End-to-End ATR Leveraging Deep Learning (M. Kreucher) -- Change Detection in SAR Images using Deep Learning Methods (Bovolo) -- Homography Augmented Momentum Contrastive Learning for SAR

Image Retrieval (M. Rysz) -- Synthetic Aperture Radar Image Based Navigation Using Siamese Neural Networks (Semenov) -- A Comparison of Deep Neural Network Architectures in Aircraft Detection from SAR Imagery (L. Chen) -- Machine Learning Methods for SAR Interference Mitigation (Huang) -- Classification of SAR Images using Compact Convolutional Neural Networks (Ahishali) -- Multi-frequency Polarimetric SAR Data Analysis for Crop Type Classification using Random Forest (Mandal) -- Automatic Determination of Different Soil Types via Several Machine Learning Algorithms Employing Radarsat-2 SAR Image Polarization Coefficients (E. Acar) -- Ocean and coastal area information retrieval using SAR polarimetry (A. Buono).

Sommario/riassunto

This carefully curated volume presents an in-depth, state-of-the-art discussion on many applications of Synthetic Aperture Radar (SAR). Integrating interdisciplinary sciences, the book features novel ideas, quantitative methods, and research results, promising to advance computational practices and technologies within the academic and industrial communities. SAR applications employ diverse and often complex computational methods rooted in machine learning, estimation, statistical learning, inversion models, and empirical models. Current and emerging applications of SAR data for earth observation, object detection and recognition, change detection, navigation, and interference mitigation are highlighted. Cutting edge methods, with particular emphasis on machine learning, are included. Contemporary deep learning models in object detection and recognition in SAR imagery with corresponding feature extraction and training schemes are considered. State-of-the-art neural network architectures in SAR-aided navigation are compared and discussed further. Advanced empirical and machine learning models in retrieving land and ocean information — wind, wave, soil conditions, among others, are also included. .