

# **USING COMPUTER VISION TECHNIQUES ON ISAR IMAGES TO IMPROVE TRACKING AND CHARACTERIZATION OF NEAR SPACE OBJECTS**

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Space Domain Awareness (SDA) refers to the comprehensive understanding and monitoring of objects and activities in outer space. It involves tracking satellites, debris, and other Near Space Objects to ensure the safety and security of space operations. SDA encompasses the collection, analysis, and dissemination of data related to space traffic, potential collisions, and space weather events. Such data consist in most cases of images from different modalities including optical, multispectral, hyperspectral and radar. In this work, we are interested in evaluating the viability of applying traditional image analysis techniques such as object segmentation to Inverse Synthetic Aperture Radar (ISAR) images of near space objects. The main objective of this evaluation is to identify mechanisms in which to fuse the extracted information from ISAR data with other imaging modalities. We show that the state-of-the-art image segmentation algorithms although not trained to manage ISAR data, are robust enough to detect spatial features from such data. Further studies are needed to provide quantitative analysis of their effectiveness.