



RECENT ADVANCES IN AI FOR NATIONAL SECURITY

Feature-Constrained 3D Scene
Segmentation for Limited
Datasets – **James Kuczynski**

Poster Abstract

The creation of truth datasets for new sensors or domains is a necessary process for supporting machine-learning algorithms, but is a slow and tedious procedure. This is especially true for airborne lidar, where each dataset is composed of millions of individual 3D points. We demonstrate a method of bootstrapping the process with a novel feature-constrained semantic scene segmentation algorithm able to train on small datasets by limiting the input to a search space of abstract features.

About the Author(s)

James Kuczynski is an associate staff member of the Active Optical Systems group at MIT Lincoln Laboratory. Since joining the Lab in 2016, he has pursued research in the calibration, processing, and automated exploitation of airborne laser radar systems, with an emphasis on novel machine learning approaches. He holds a BS and MS in computer science from the University of Massachusetts Lowell.

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