PRESS RELEASE

Airbus and OneView Prove Synthetic Data Outperforms Real Imagery to Train AI Algorithms

A joint Proof of Concept undertaken by Airbus and OneView has validated the use of synthetic data to boost the performance of machine learning algorithms, while reducing the development time and costs associated with the collection and annotation of real-word geospatial imagery.

Synthetic geospatial images are virtually generated images designed to mimic real-world images, that come fully annotated and ready-for-training.

With Airbus producing 100-times more data than it did 10 years ago, the only way its customers can interpret this data is to use machine learning (ML) to automatically extract insights from the imagery. To achieve this they need large and diverse training datasets. However, access to labeled data is holding them back from training those algorithms. Indeed, the lack of annotated data is a key problem associated with geospatial machine learning algorithm training. To solve this bottleneck, Airbus joined forces with OneView to prove that synthetic data is a valid replacement for real imagery to train ML algorithms.

To achieve this an aircraft-detection algorithm was trained using three different training datasets. The first consisted of only real data. The second was composed exclusively of synthetic data and the third was a mix of real (5%) and synthetic data (95%). A more challenging problem than straightforward “airplane” detection, the algorithm was also tasked with the classification of different airplane categories.

The results showed that the use of synthetic data resulted in an improvement in the accuracy of the algorithms by up to 20%. This provides important evidence that the use of synthetic data is a valid method to boost performance of machine learning algorithms, while reducing development time and solving the data bottleneck associated with real-word geospatial imagery.

“The case study performed with OneView has exceeded our initial expectations,” says Jeff Faudi, Airbus Defence and Space (Intelligence), Toulouse, France. “It confirms the value of using synthetic data as a complementary approach to traditional methods based upon real data labelling. When faced with the need to improve a model on rare objects, synthetic data can make it much easier to retrain than with real imagery, where collection and annotation of additional relevant rare objects is long and sometimes not possible. I am convinced that over the next few years there will be an increase in the use of Synthetic Data in training algorithms. It is clear that any AI data set will contain 90% of synthetic data to produce better accuracy and more insights.”

The success of the POC highlights the significant role synthetic data has to play in improving the accuracy of algorithms.
“OneView resolves the training data bottleneck by quickly creating perfectly labelled data for your needs,” says Omri Greenberg, CEO and Co-founder of OneView. “This cuts imagery collection and annotation costs dramatically and reduces the time needed to train algorithms from months to weeks. We also improve the accuracy of Machine Learning algorithms by up to 25%. And this is what we all want — better algorithms that can be deployed faster and that cost us less.”

Airbus and OneView have outlined the POC in more detail in their whitepaper, which can be downloaded here.

For more information on OneView’s synthetic data or to book a demo visit www.one-view.ai or email info@one-view.ai.

About OneView

OneView enables Machine Learning (ML) teams to accelerate their algorithm training process by generating synthetic datasets, designed specifically for the geospatial domain. OneView replaces slow and manual data collection and annotation, with the automated and swift creation of fully annotated, ready-for-training data to unleash the true potential of machine learning models.

Airbus Defence and Space (Intelligence)

At Airbus Defence and Space (Intelligence) we support our customers with technologies and capabilities to strengthen how they plan and respond to challenges and missions - with greater speed and higher certainty. With 30+ years of experience in Earth Observation and Defence Systems, we provide sustainable solutions that deliver exactly what our customer's need, when they need it, where they need it.