ENVI DEEP LEARNING MODULE

Harris Geospatial has developed commercial off-the-shelf deep learning technology that is specifically designed to work with remotely sensed imagery to solve geospatial problems. The ENVI Deep Learning module removes the barriers to performing deep learning with geospatial data and is currently being used to solve problems in agriculture, utilities, transportation, defense, and other industries.

ACCURACY COUNTS

ENVI is the leading image analysis technology on the market and its patented, science-based analytics are accurate and reliable for extracting meaningful information from all types of geospatial imagery and data. ENVI’s preprocessing tools such as calibration, stretching, and color space transforms create consistent input data for deep learning models. With deep learning technology built on TensorFlow, the leading open source library, you can create reliable models for image classification.

EASY TO USE

Not everyone is a deep learning expert. Harris Geospatial developed the ENVI Deep Learning module with this in mind. The module has intuitive tools and workflows that don’t require programming and enable users to easily label data and generate models with the click of a button.

It is also simple for seasoned imagery experts to fuse information layers such as spectral indices, target detection results, Spectral Angle Mapper results, or any other data transforms to create more robust classifiers.
HIGHLIGHTS

Works with multi-modal geospatial data and imagery to solve problems across industries

Makes it easy to label data, edit labels, extract features, and iterate

Reduces complexity enabling wide access to ENVI science and deep learning neural networks

ENVI DEEP LEARNING MODULE AT WORK

The ENVI Deep Learning module is offered as an extension to ENVI for desktop applications and is built on the ENVI Task framework. This means that classifiers can be built once and run in any environment, whether that’s your desktop computer, on-premises servers, or in the cloud. To demonstrate how you can use this technology, here are a few real-world examples of customer problems that have been solved using the module.

AGRICULTURE

Extracting curved rows in agricultural fields is a difficult problem for traditional remote sensing algorithms. Since the ENVI Deep Learning module works like your brain to identify and extract features, a customer was able to easily determine plant rows. This information was then used to count crops, identify missing plants, and generate management zones for yield improvements.

UTILITIES

Climbing wind turbines to inspect for damage is expensive and can be dangerous. The ENVI Deep Learning module was used in combination with UAV data to discern damage to turbine blades from lightning strikes that require repair verses dirt, paint chips, and damage from bird strikes that do not need to be repaired. The result has been improved safety and reduced costs and inspection times.

DISASTER RESPONSE

When disasters strike, response time is very important. The ENVI Deep Learning module has been tuned so that you don’t need thousands of samples to create models for finding features. After a recent earthquake, the ENVI Deep Learning module was used to quickly identify rubble piles across a city. In this example, only 10 polygons were used to build an accurate classifier providing actionable information so responders could navigate and move supplies in order to save lives.

HAVE A PROBLEM THAT DEEP LEARNING MIGHT BE ABLE TO SOLVE? HARRIS GEOSPATIAL CAN WORK WITH YOU TO DETERMINE THE BEST SOLUTION FOR YOUR PROJECT REQUIREMENTS.

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