Sentinel

ML-driven reconnaissance platform on the edge

The military and other agencies rely on machine learning (ML) platforms for reconnaissance missions in demanding conditions. A dependable and trusted digital sentinel not only yields tactical advantages on the ground. Increasingly, enhanced video reconnaissance technologies are a means of amplifying pressure on adversaries.

IBM has the solution for teams requiring advanced AI capabilities for identifying and monitoring entities of interest, even in challenging environments.

Cutting-edge situational awareness and monitoring capabilities
Sentinel is a highly adaptable and quickly deployable video reconnaissance ML solution. With its ability to operate across a range of sensor modalities—short and long-wave infrared, red, green, blue (RGB) signals, and more—Sentinel's powerful computer vision algorithms convert multiple video data feeds from one format to another. The output is a ML-optimized situational awareness capability. Individuals, vehicles, vessels and buildings of interest can be detected and monitored in various complex terrains in real time, securely, with limited active operator involvement.

Sentinel is also outfitted with an entity labeling tool, taking an additional burden off operators in the field.

Interoperability across the tactical tech stack
Beyond its core capabilities as a computer vision ML pipeline, a key Sentinel feature is that it's a containerized edge solution. Its ML models can be installed on virtually any small compute infrastructure, making it deployable on small, lightweight and low-power technologies carried by soldiers. What's more, Sentinel is built on the latest open-source, state-of-the-art ML frameworks. The pipeline can be installed on clusters such as OpenShift or MicroShift edge. Plus, IBM's Sentinel ML pipeline is primed for new models for new sensors.

Sentinel is compatible with a multitude of end-user devices, including the Team Awareness Kit (TAK), the Integrated Visual Augmentation System (IVAS), and Enhanced Night Vision Goggles-B (ENVG-B). Additionally, it is compatible with IBM's CXEdge sensor and data integration platform and the Hatteras ML Operations platform.

Transformational AI tools for warfighters
IBM **oLabs™** Sentinel was developed by IBM oLabs. oLabs is home to a team of data scientists, ML engineers, academics, and special operations Veterans focused on operationalizing mission-specific AI and emerging technology solutions for the US Government.

oLabs features a highly experienced cadre of technical solution architects who provide reachback support to ensure their customers' solutions are scalable to meet rapidly evolving needs and technological advances. To learn more, visit ibm.com/oLabs.