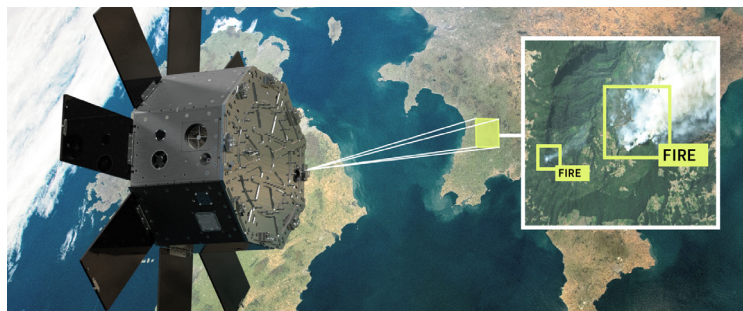# Artificial Intelligence & Machine Learning

Hardware and Software Solutions

At Sidus Space, we design, integrate, and implement custom AI/ML solutions that power intelligent, autonomous operations across space and terrestrial domains. Leveraging our proprietary FeatherEdge™ platform, we deliver near real-time insights to support mission-critical decisions.

From spacecraft docking and payload deployment to space debris tracking and autonomous navigation, our AI/ML systems are built for precision, speed, and adaptability.

Key Benefits

» **Mission-Critical Insights -** Deliver actionable intelligence to support informed decision-making in high-stakes aerospace operations

» **Autonomous Spacecraft Operations -** Enable spacecraft and satellite systems to operate independently with precision and efficiency

» **Advanced Data Analytics -** Rapidly process and analyze large datasets to extract critical insights and drive mission success

» **Real-Time Situational Awareness -** Provide near real-time data analysis to support swift, informed responses in dynamic environments

» **Predictive Operations -** Leverage machine learning models to forecast trends, detect anomalies, and optimize mission outcomes

» **Enhanced Space Domain Awareness -** Identify complex patterns in space data to support strategic planning and operational readiness

Capabilities

Artificial Intelligence and Machine Learning

Design, integrate and implement custom AI/ML solutions that leverage next generation AI to help streamline operations, improve efficiency and provide predictive analytics.

» AI/ML Engineering and Design
» AI/ML Implementation and Integration Services
» AI Consulting Services
» Custom AI/ML Software Algorithms and Models
» Edge Computing
» Intelligent Automation
» Machine Learning
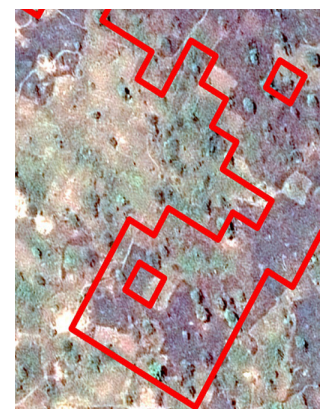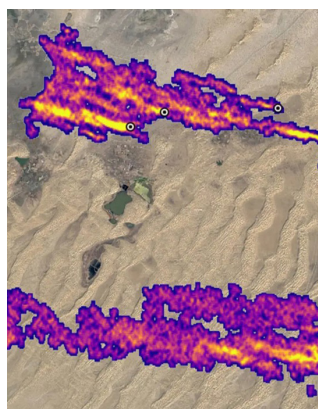» Predictive Analytics and Near Real-time Data Analysis

Computer Vision

Combine deep learning algorithms with traditional computer vision approaches with custom software solutions to extract meaningful insights from sensors.

» Object Detection, Tracking and Avoidance
» Image Classification and Segmentation
» Autonomous Navigation and Monitoring
» Spacecraft Docking and Payload Operations
» Space Debris Surveillance

Applications

» Autonomous Spacecraft and Satellite Operations
» In-Orbit Servicing and Technology Demonstrations
» Crisis and Disaster Response
» Methane Emission Monitoring
» Urban Planning and Wildfire Detection
» Defense, Finance and Illegal Activity Monitoring
» Agriculture and Environmental Intelligence