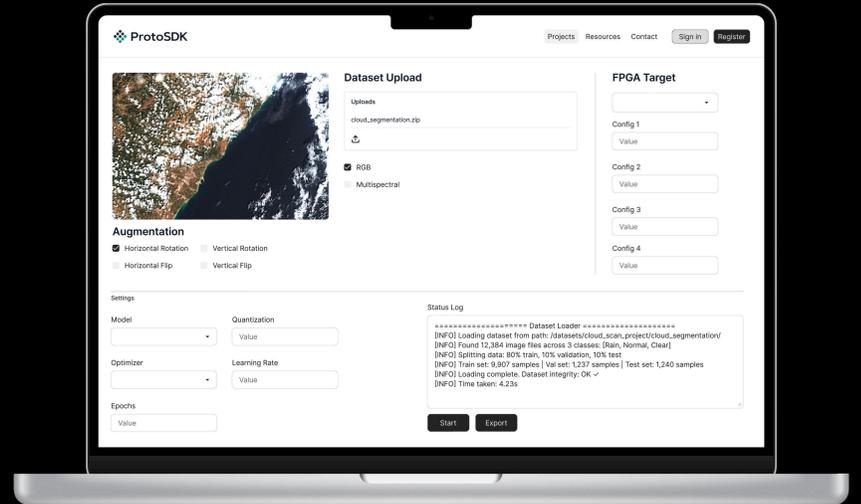


ProtoSDK

Simplifying FPGA Deployment for Space Missions

ProtoSDK is a development framework that simplifies the deployment of advanced ML/AI models onto FPGA hardware. It enables mission teams with limited hardware experience to convert their signal or image-processing models into high-performance onboard accelerators.

This provides the flexibility to deploy new applications and update satellites in orbit to meet evolving mission needs.



How it Works?

Step 1. Model training

Creation of use-case specific models from supported architectures

Step 2. Quantization

Optimization of the model to lower memory footprint

Step 3. Compilation

Transferring the model from standard format to FPGA-compatible format

Deployment



What it Means for You



Faster Time to Orbit

Deploy your AI models without writing low-level code. ProtoSDK streamlines integration—so you can go from lab to launch, faster.



Flight-Proven Framework

ProtoSDK has already been utilized to deploy anomaly detection on ESA OPS-SAT mission.



Smarter Payloads, Greater Value

Process data directly in orbit to reduce bandwidth, focus on priority events, and extract real-time insights—without waiting for ground analysis.



No Hardware Complexity

ProtoSDK hides the complexity of FPGAs. Your AI/ML teams can stay in familiar tools like PyTorch while still targeting efficient, space-ready systems.

Supported Hardware & AI/ML Models

Supported Families

- AMD 7 Series
- AMD UltraScale
- AMD UltraScale+

Supported AI/ML Models

Classification

- ResNet – CNN with residual connections

Segmentation

- ResNet/UNet, FCN – pixel-wise mapping

Object Detection

- YOLO, SSD – real-time multi-scale detection

Super-Resolution

- ESPCN – efficient image upscaling

Lightweight Models

- MobileNet – optimized for low-power compute

Who It's For



Satellite Operators & Mission Planners

Improve operational efficiency with onboard AI inference.



Sensor & Payload Developers

Add onboard AI capabilities like anomaly detection, image segmentation, or object classification with minimal hardware changes.



System Integrators

Speed up delivery cycles and reduce integration overhead by using a unified deployment framework.

Ready for collaboration? Contact us at sales@protostar.ai