



NPU Lock™ - AI SDK & NPU ACCELERATION PLATFORM

Embedded Edge AI for Real-Time Vision Systems

DEPLOY AI AT THE EDGE — FAST, LIGHTWEIGHT, REAL-TIME

Our **NPU SDK** Platform enables rapid deployment of optimized neural-network models directly onto embedded AI hardware for real-time object detection, tracking, and intelligent imaging applications.

Built for low-latency edge inference, the platform supports streamlined model conversion, deployment, profiling, and live sensor integration — ideal for UAVs, surveillance systems, robotics, smart optics, and autonomous embedded devices.

DEVELOPER TOOLS & FEATURES

ArtStudio Development Environment

- Visual AI model management
- Precision optimization tools
- Runtime profiling
- Build automation
- Deployment configuration

Profiling & Debugging

- Inference timing
- NPU utilization
- Performance statistics
- Detection confidence metrics

Flexible Configuration

- Rapid deployment
- Easy parameter tuning
- Dynamic model switching
- Mission-specific optimization

PLATFORM ADVANTAGES

Feature	Benefit
Embedded NPU Acceleration	Low power, high performance
YOLOv5 Optimization	Fast deployment
Real-Time HDMI Output	Immediate visualization
Lightweight Runtime	Reduced system overhead
Sensor Integration	Live AI processing
Profiling Tools	Faster optimization

CORE PLATFORM CAPABILITIES

Hardware-Accelerated AI Inference

- Dedicated embedded NPU acceleration
- Optimized binary model deployment
- Real-time object detection
- High-efficiency edge processing

Neural Network Support

Supports conversion and deployment of:

- ONNX models
- YOLOv5 architectures
- Custom-trained AI networks
- Mixed precision optimization workflows

Real-Time Performance

- Low-latency AI execution
- Live video object detection
- Bounding-box rendering
- Profiling and inference statistics
- Optimized for embedded environments

AI DEPLOYMENT WORKFLOW

MODEL OPTIMIZATION

- Import AI models
- Configure inference parameters
- Build optimized .npubin binaries
- Export hardware-ready NPU packages

EDGE DEPLOYMENT

- Flash-drive deployment support
- JSON-based runtime configuration
- MAVLink and sensor-compatible workflows
- Lightweight runtime architecture

REAL-TIME EXECUTION

- Local image inference
- Video analytics
- Sensor-based live detection
- HDMI visual output with overlays

LIVE SENSOR AI DETECTION

Real-Time Object Detection Pipeline

- MIPI CSI camera interfaces
- HDMI visualization
- Live bounding boxes
- Confidence scoring
- Dynamic object tracking

BUILT FOR EDGE AI DEPLOYMENT

- Autonomous Systems
- Embedded Vision
- Smart Sensors
- UAV Payloads
- Tactical AI Imaging
- Edge Intelligence Platforms