

NoctuaEdge™ Developer Kit

Accelerate your edge AI innovation with powerful tools, optimized models, and ready-to-deploy templates.

1. What's Included

-  NoctuaEdge™ SDK (Python, C++, Rust bindings)
-  Containerized runtime environment (Docker & OCI-compliant images)
-  Pre-trained models (Vision, NLP, Time-series)
-  Sample edge applications and pipeline templates
-  Model optimization toolkit (quantization, pruning, distillation)
-  Edge UI – local dashboard interface for device management
-  Developer Portal access with documentation and APIs

2. System Requirements

- **Supported Hardware:**
 - NVIDIA Jetson (Nano, Xavier, Orin)
 - Raspberry Pi 4/5
 - Intel NUC, AMD Ryzen Embedded
- **Operating Systems:**
 - Ubuntu 20.04+, Debian 11+, Yocto (with meta-layer), Alpine Linux, Android Things
- **Dependencies:**
 - Docker 20+, Python 3.7+, pip, Node.js (for dashboard)
- **Minimum Specs:**
 - RAM: 2GB minimum (4GB+ recommended)
 - Storage: 1GB available disk space

3. Quick Start Guide

Step-by-step setup:

1. Download SDK from devhub.noctua.solutions
2. Flash your edge OS (e.g., Ubuntu Core) to the target device
3. Pull container:

```
bash
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docker pull noctua/noctuaedge:latest
```

4. Launch dashboard:

```
bash
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python3 edge_ui/start.py
```

5. Deploy a sample model:

```
lua
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python3 deploy_model.py --model=vision --device=jetson
```

4. SDK Capabilities

- Real-time image & video stream processing
- Audio & keyword detection pipelines
- Sensor fusion and multivariate anomaly detection
- On-device federated learning node interface
- REST, gRPC, and WebSocket API integrations
- Explainability: Built-in LIME & SHAP diagnostics
- Cloud sync: AWS, Azure, GCP connectors

5. Integration Templates

Pre-built edge AI blueprints:

-  Industrial monitoring (vibration + visual inspection)
-  Retail shelf analytics & smart inventory
-  Autonomous drone obstacle navigation
-  Smart building occupancy and energy sensing
-  Predictive maintenance for manufacturing equipment
-  NLP-driven field support bots (offline-capable)

6. Developer Support & Licensing

- **Licensing:**
 - SDK & tools under NoctuaEdge Developer License

- Open modules released under MIT License
- **Support Options:**
 - Standard: Community access via forums and documentation
 - Premium: Direct support for Enterprise & Partners
- **Developer Portal:**
 - devhub.noctua.solutions

7. Contact & Contributions

-  Email: dev@noctua.solutions
-  GitHub: github.com/noctua/noctuaedge
-  Forum: forum.noctua.solutions