EDGE IMPULSE

RA Ecosystem Partner Solution
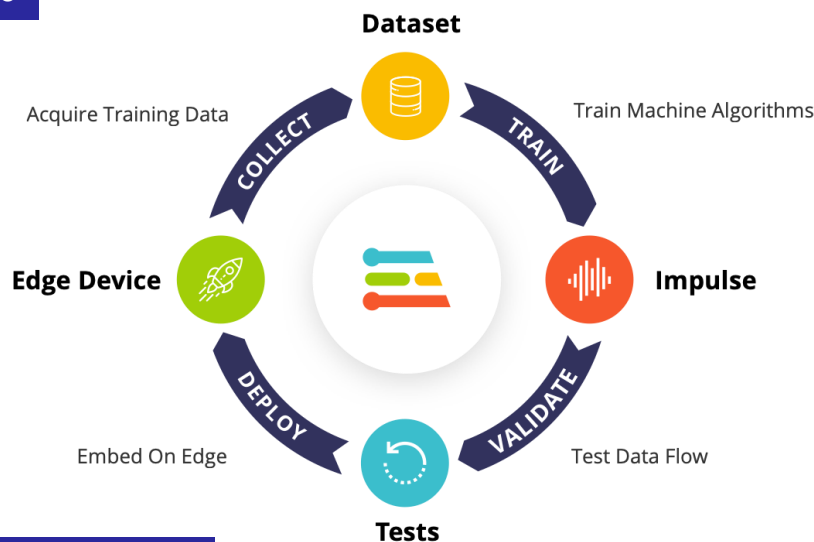# Object Detection on RA8D1

Solution Summary

Edge Impulse empowers ML teams to run AI at peak performance on any edge device, with unmatched ease and speed. The combination of the RA8, the first Cortex M85 MCU in the market, and Edge Impulse enables users to create ultrafast edge AI applications using Arm Helium™ technology. Support is now available for the RA8 MCU series, with specifically the RA8D1 MCU allowing image applications to be generated.

Features/Benefits

- Low to no-code development solution making it easier to build valuable datasets and develop advanced ML applications
- Extremely fast vector calculus, thanks to the Arm Helium™ technology, enables high performance of machine learning models
- Image based AI applications will be implemented using Arm Helium™ for the first time
- Choices between several image classification and detection algorithms can allow entry into new markets
- FOMO (Faster Objects, More Objects) object detection model included; combined with the RA8 creates a unique solution for facial/person detection applications with a small memory footprint and low latency

Diagrams/Graphics

Target Markets and Applications

- Smart Sensors
- Industrial IoT
- Predictive Maintenance
- Animal Monitoring
- Fraud Detection
- People Counting

https://edgeimpulse.com

2023.12

EDGE IMPULSE

Build. Train. Optimize. **AI for the edge.**

Build datasets, train models, and optimize libraries to run on any edge hardware, from extremely low-power MCUs to efficient Linux CPU targets and GPUs. Edge Impulse empowers ML teams to run AI at peak performance on any edge device, with unmatched ease and speed.

Any data, any device

Edge Impulse developers can get data from various sources, including their own sensor hardware, public datasets, and data generated through simulations or synthetic data generation.

- Unlock sensor data value
- Advance algorithm development
- Optimize edge AI models
- Target agnostic edge deployment

Easily integrate with existing ML workflows

Collaborate across your data, ML, and embedded teams to build optimized production-ready models faster.

Achieve measurable results

Future-proof your products. Our customers win by adding edge intelligence to their products, from low-power wearables to industrial gateways.

Build with the world's top hardware, sensors, and cloud platforms

Benefit from built-in integrations with our leading partner ecosystem including MCUs to MPUs and GPUs, sensors, cloud services, data science tools, and digital twin platforms.

Convert Python Models into Optimized C++

- Profile on-device performance of any trained model
- Analyze the impact of architectural decisions
- Generate optimized C++ libraries
- Deploy to any edge device

profile ()

target: Cortex-m4f
RAM: 39.1 kB
flash: 37.6 kB
latency: 145 ms

deploy ()

Python SDK