SensiML™

RA Ecosystem Partner Solution

Rapid IoT Edge AI/ML Development
SensiML Analytics Toolkit

RENESAS RA READY

Solution Summary

SensiML Analytics Toolkit is a comprehensive, end-to-end workflow for developing production-grade AI//ML models for the IoT edge for [RA family of MCUs](). The tool suite covers full pipeline development including MLOps dataset management, AutoML model optimization, firmware code generation, and test.

Features/Benefits

- Full MLOps dataset management (multiuser teams, version control, full annotation)
- Best-in-class code optimization (ML models as small as 10kB)
- AutoML model generation (no data science expertise required)
- GUI-based development (no coding/scripting required to generate working AI model code)
- Comprehensive test/validation with bit-exact HW emulation and on-device test / logging

Diagrams/Graphics

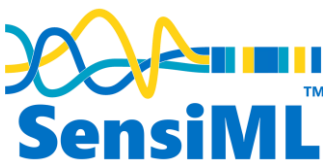**Data Capture Lab**
(Data Capture)

Analytics Studio
(Learning model generation & analysis)
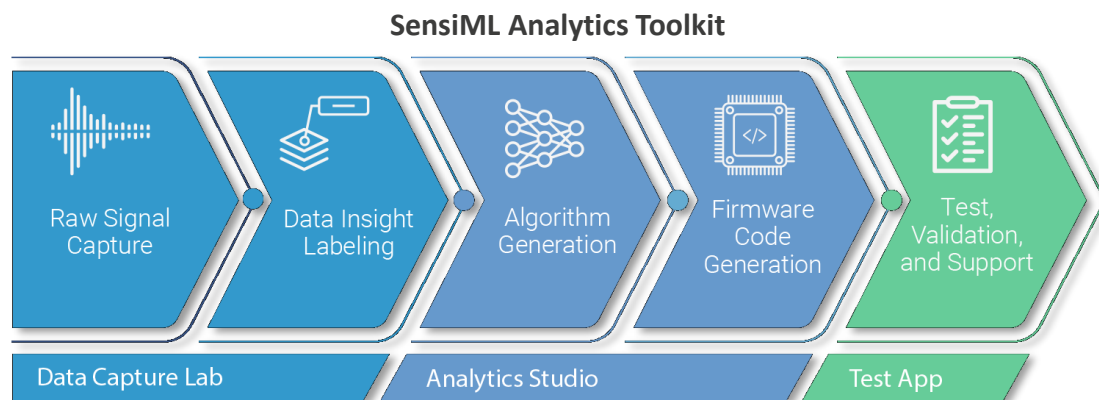

Target Markets and Applications

- Industrial IoT Sensing
  - Predictive maintenance
  - Anomaly detection
  - Process monitoring
- Smart Home and Wearables
  - Smart appliances
  - Fitness wearables
  - Home security
- Smart Building
  - Lighting control,
  - Smart occupancy sensors
  - Predictive maintenance

https://sensiml.com

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SensiML - Company Overview

SensiML offers cutting-edge AutoML workflow software for developing AI that runs at the IoT edge. With SensiML Analytics Toolkit, developers have an AI development tool which supports data collection, labeling, feature extraction, ML classification and auto code generation transforming raw sensor data into true application insight in real-time at the sensing IoT node itself. Whether gesture recognition, activity detection and analysis, industrial machinery anomaly detection, audio event detection, predictive maintenance, SensiML can rapidly build working IoT firmware code to detect your application events of interest.

Automation built into the tool drastically reduces development time and cost, allowing projects ranging from single users to large teams to generate optimized edge AI sensor algorithms in a fraction of the time that would have otherwise been required with hand-coding. For more information, visit www.sensiml.com

SensiML Analytics Toolkit

The SensiML Difference

SensiML focuses on providing commercial product engineering teams with production quality AI tools for building real products:

- **Complete end-to-end AI workflows**
  Far more than just an AI modeling framework or AutoML engine, SensiML provides MLOps support for creating, managing, and maintaining high quality labeled ML datasets

- **Full code transparency and greatest flexibility**
  No other IoT AI tool provides as much control across labels, pre-processing, models, parameters, and code

- **Solution scalability**
  With models compact enough to target even 8-bit MCUs

- **Built from the ground-up for commercial development teams**
  With support for multi-user, multi-discipline collaboration workflows, and project revision control

- **The most comprehensive partner ecosystem and global support network**
  Including top-tier distributors, application integrators, and direct engineering support worldwide