

AutoML in Smart IoT Devices – A SensiML Whitepaper

- *Highlights common but avoidable machine learning pitfalls that can derail AI and advanced IoT sensor data analytics*
- *Reviews the key stages of the AI-based development process from planning to testing*
- *Gives practical guidance for using AutoML tools to replace increasingly outdated manual coding methods*

PORTLAND, Ore., April 10, 2020 /PRNewswire/ -- SensiML Corporation, a leading developer of AI tools for building intelligent IoT endpoints, has released a [whitepaper](#) entitled "Building Smart IoT Devices with AutoML: A Practical Guide to Zero-Coding Algorithm Design." This comprehensive overview defines the smart edge AI approach for building IoT sensing applications and explains the many benefits of creating intelligent endpoints. It then discusses automated machine learning workflows (known as "AutoML") and reviews the key stages of the development process from modeling to prototyping. Most importantly, the paper also gives developers new to AI and machine learning practical guidance and examples for implementing designs using AutoML tools.

AI holds great promise for IoT device developers seeking to build intelligence into IoT embedded sensing products, but until just recently it has remained beyond reach for most development teams. A new generation of [AI development tools](#), such as those offered by SensiML, enable algorithm code to be automatically created by software that learns by example without explicit coding or data science expertise. Furthermore, state of the art tools such as those from SensiML can build sophisticated sensor code capable of running locally on microcontrollers embedded within the IoT devices themselves. This approach enables the developers of smart edge IoT devices to build applications with real-time responsiveness, adaptive smart devices, network efficiency and resiliency, and security and data privacy, without requiring extensive data science and firmware coding expertise. This whitepaper shows how such tools can be used to create smart edge IoT devices.

What Readers will Learn

The objective of this whitepaper is to teach users how to implement the Smart Edge AI approach when planning, designing, executing and evaluating their smart IoT applications. Specifically, it discusses the various items IoT developers should consider when implementing automated machine learning and provides them with practical advice from sensor selection and data capture to generating local insights. The key sections of the whitepaper include:

- How the Smart Edge AI Approach Works
- The Key Stages of Implementing the Smart Edge AI Process
- Developing Your Application Model
- Prototype IoT Selection

- Sensor Selection and Data Collection
- Data Labeling
- ML Algorithm Development
- Converting an Algorithm to Optimized Endpoint Code
- Test/Validation of Local IoT Device Insight

Availability

The Whitepaper is available at <https://sensiml.com/get-whitepaper-building-smart-iot-devices-with-automl>. For more information on SensiML, visit www.sensiml.com.

About SensiML

SensiML, a subsidiary of QuickLogic (NASDAQ: QUIK), offers cutting-edge software that enables ultra-low power IoT endpoints that implement AI to transform raw sensor data into meaningful insight at the device itself. The company's flagship solution, the SensiML Analytics Toolkit, provides an end-to-end development platform spanning data collection, labeling, algorithm and firmware auto generation, and testing. The SensiML Toolkit supports Arm® Cortex®-M class and higher microcontroller cores, Intel® x86 instruction set processors, and heterogeneous core QuickLogic SoCs and QuickAI platforms with FPGA optimizations. For more information, visit www.sensiml.com.

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