



# Application Software Pack: ML-Based System State Monitor

## APP-SW-PACK-ML-STATE-MONITOR

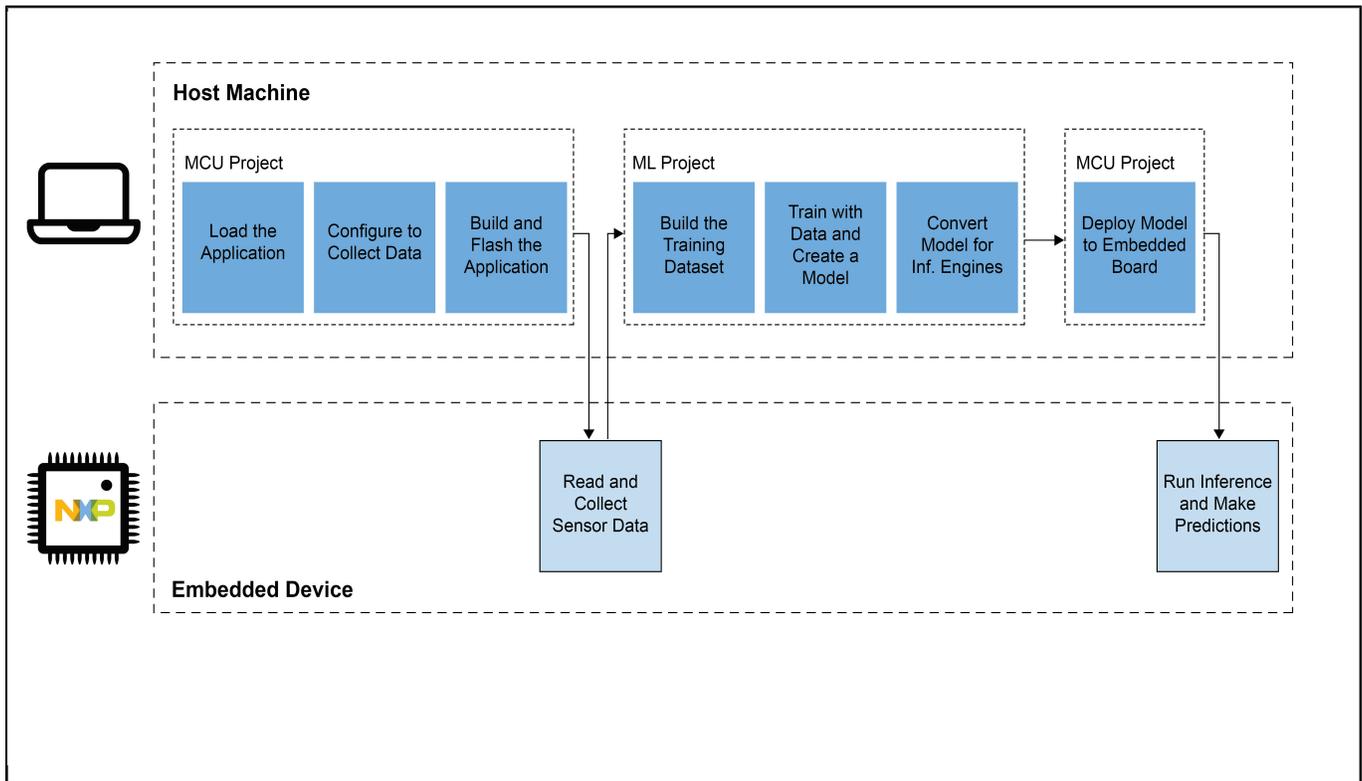
Last Updated: Sep 11, 2024

This Machine Learning (ML) application software pack, ML-based System State Monitor, relies on the Deep Learning (DL) subfield of ML and enables developers to develop and deploy neural networks on MCU-based systems for building smart sensing applications. This example software package, designed to show how to create a fan vibration state monitoring solution and also provides details on how to validate and evaluate the performance of a model by running it through different inference engines on an embedded sensing device.

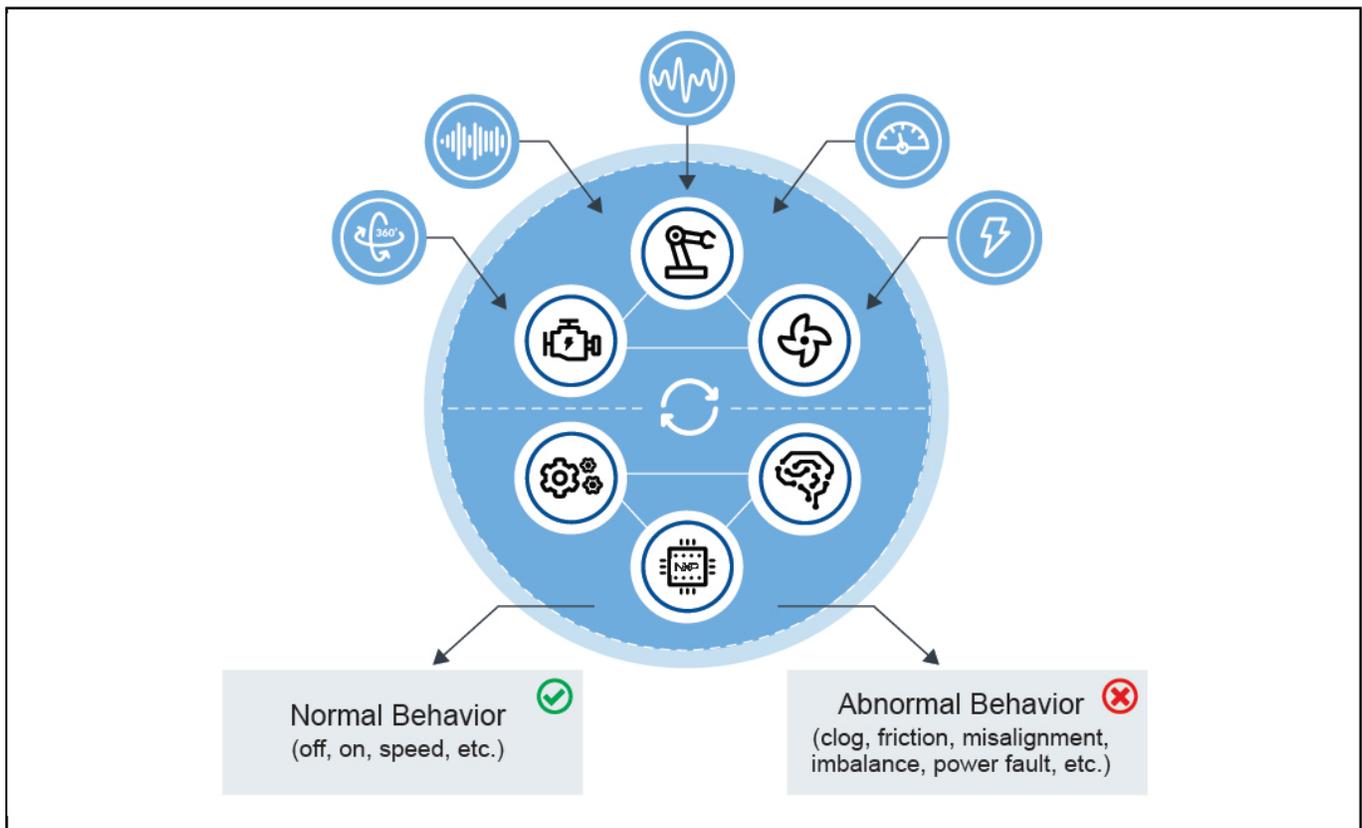
This App SW Pack is available for the MCX N family with dedicated eIQ® Neutron neural processing unit (NPU) for machine learning applications, i.MX RT1170 family of Crossover MCUs, LPC55S6x and K66 families of general purpose MCUs.

To access this software pack, click on the download button here to visit the NXP MCUXpresso SDK github repository and follow the steps found in this [App SW Pack ML State Monitor Lab Guide](#).

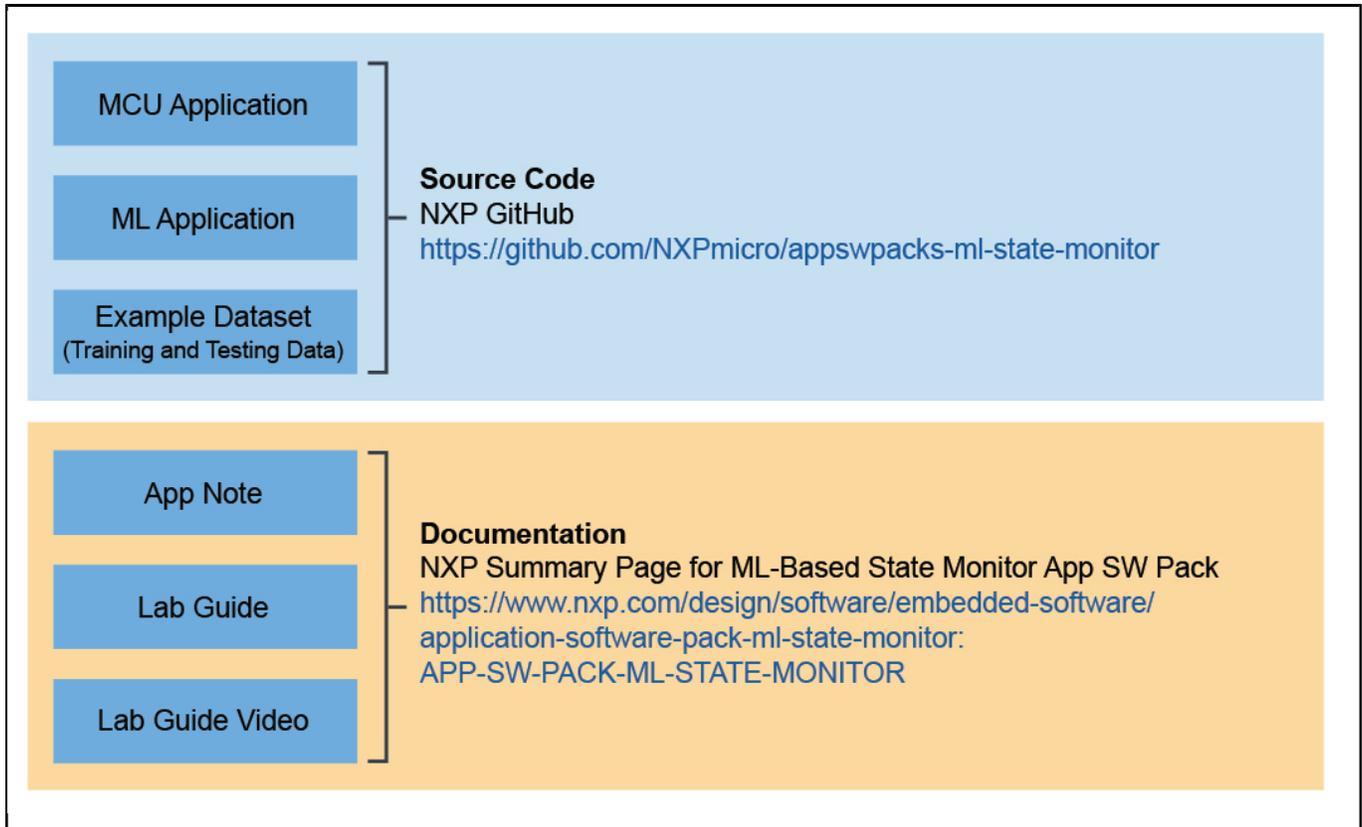
## ML-based System State Monitor - App SW Pack Block Diagram



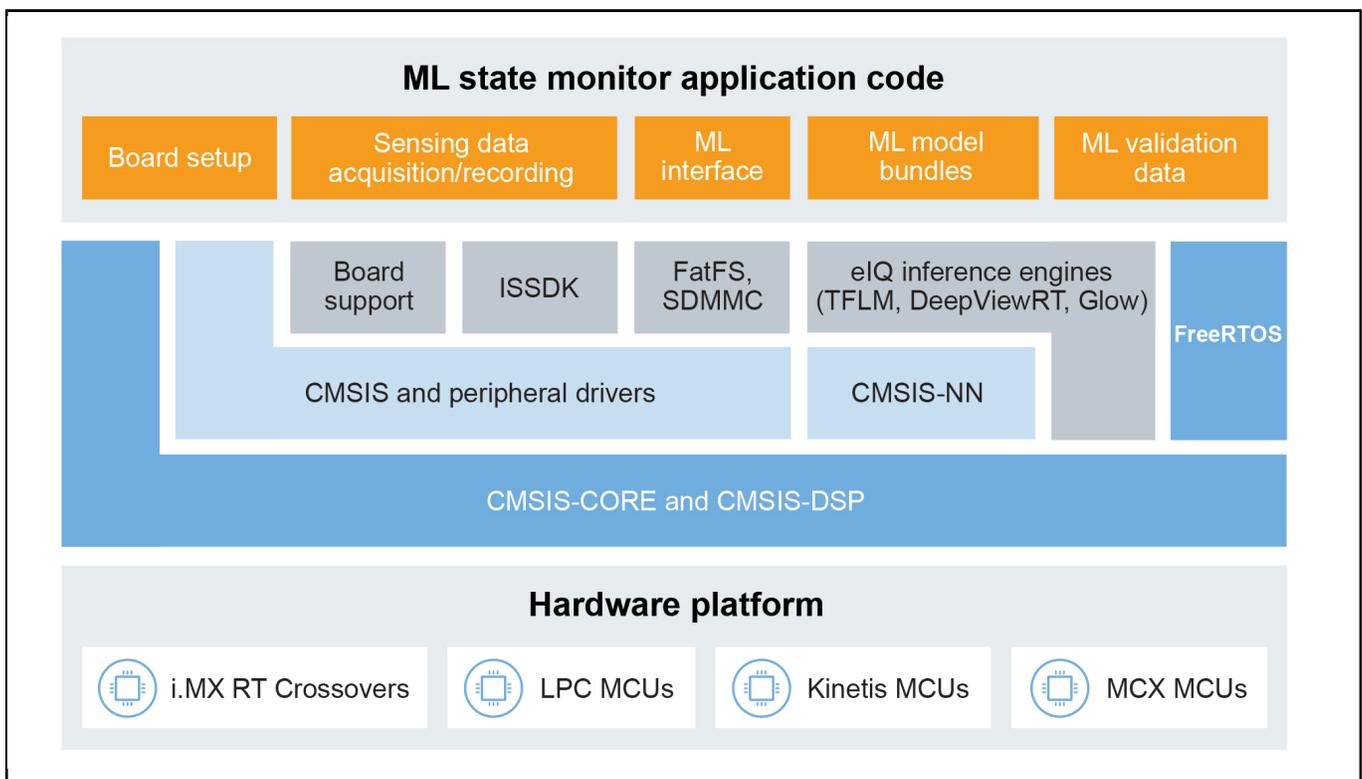
## ML-based System State Monitor - App SW Pack - Example Block Diagram



## ML-based System State Monitor - App SW Pack - Collaterals Block Diagram



## ML-based System State Monitor - App SW Pack - SW Stack Block Diagram Block Diagram



View additional information for [Application Software Pack: ML-Based System State Monitor](#).

**Note:** The information on this document is subject to change without notice.

---

**[www.nxp.com](http://www.nxp.com)**

NXP and the NXP logo are trademarks of NXP B.V. All other product or service names are the property of their respective owners. The related technology may be protected by any or all of patents, copyrights, designs and trade secrets. All rights reserved. © 2026 NXP B.V.