

Corporate TDK announces availability of automated ML Platform Integration for Arm[®] Keil[®] MDK

- TDK's new group company Qeexo launches AutoML for Arm Keil MDK
- Qeexo AutoML enables end-to-end embedded machine learning and development workflows with Qeexo AutoML and Arm Keil MDK
- Qeexo AutoML automatically builds machine learning solutions optimized for ARM processors

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TDK Corporation (TSE 6762) announced the availability of the first automated ML platform integration for Arm Keil MDK from Qeexo, a TDK group company. The Qeexo AutoML platform supports a wide range of machine learning algorithms and is designed for lightweight Cortex-M0 to -M4 class processors with ultra-low latency and power consumption. The platform allows customers to leverage sensor data to rapidly build and deploy machine learning solutions. The Qeexo AutoML platform requires an incredibly small memory footprint, making it optimal for applications in industrial, IoT, wearables, automotive, mobile, and other highly constrained environments.

Qeexo AutoML's integration for Arm Keil MDK supports seamless, streamlined, end-to-end embedded machine learning development workflows, enabling integration of output libraries from Qeexo AutoML. The integration encapsulates the ML model into the Arm Keil IDE using the CMSIS-Pack mechanism for running the final custom binary application on an Arm Cortex based MCU. Qeexo AutoML provides a no-code environment, enabling data collection and training of different machine learning algorithms, including both neural networks and non-neural-networks, to the same dataset. It generates metrics for each (accuracy, memory size and latency), so that users can pick the model that best fits their unique requirements. Qeexo AutoML streamlines intuitive process automation, enabling customers without precious ML resources to design Edge AI capabilities for their own specific applications.

"As machine learning (ML) becomes increasingly prevalent in embedded and IoT, it's critical that we empower embedded software developers to navigate this new area and continue to innovate," said Reinhard Keil, senior director, embedded technology, Arm. "By abstracting the entire ML development process with a powerful and easy-to-use graphical user interface, Qeexo AutoML enables rapid build, test, and deployment of ML models to Arm Keil MDK allowing embedded and IoT developers to harness the power of ML as they build new solutions on Arm."

Sang Lee, CEO, Qeexo noted, "Qeexo AutoML's integration with Arm Keil MDK closes the gap between machine learning and embedded development, enabling effortless integration of Qeexo AutoML models to any Arm Keil MDK project."

Qeexo AutoML with Arm Keil MDK support will be available at the end of Q1 2023.

TDK will present magnetic solutions, sensors, and embedded motor control solutions as well as power supply solutions, components, and software for Internet-of-Things applications at Embedded World 2023 exhibition and conference, March 14-16, 2023, at the Nürnberg Messe, Nürnberg, Germany, and can be found at Hall 1 – #1-550. Qeexo will demonstrate their machine learning platform solution within the TDK booth and showcase their full range of technology solutions within the Arm pavilion Hall 4 - #4-504. For additional information on the Qeexo ML platform, please visit https://geexo.tdk.com or contact Qeexo Sales at https://geexo.tdk.com/contact-us/.



Glossary

- AutoML: Automated machine learning is the process of automating the tasks of applying machine learning to real-world problems.
- tinyML: Tiny machine learning is broadly defined as a fast-growing field of machine learning technologies that can perform on-device sensor data analytics at extremely low power.
- ML: Machine learning is a field of inquiry devoted to understanding and building methods that 'learn', that is, methods that leverage data to improve performance on some set of tasks
- Smart Edge solutions: Smart Edge solutions refers to the analysis of data and development of solutions at the site where the data is generated.
- Smart Edge device: An intelligent edge device is a sophisticated IoT device that performs some degree of data processing within the device itself.
- Arm Keil MDK: Is a comprehensive software development solution for Arm[®]-based microcontrollers and includes all components that you need to create, build, and debug embedded applications.

Main applications

- Industrial IoT for manufacturing
- Automotive
- Medical
- · Leisure, sports, and fitness activity monitoring for wearable sensors
- Indoor/outdoor navigation (dead-reckoning, floor/elevator/step detection)
- Smart home appliances such as robotic vacuum cleaners
- · Condition based monitoring, predictive maintenance
- Machine learning platform and applications development
- Developer tools, IDE

Main features and benefits

- Fully automated, no code machine learning platform
- · Seamless integration of Qeexo models with Arm Keil MDK
- Supports 17 different machine learning algorithms
- Wide range of hardware support for Arm Virtual Hardware M-55 and U-55

About TDK Corporation

TDK Corporation is a world leader in electronic solutions for the smart society based in Tokyo, Japan. Built on a foundation of material sciences mastery, TDK welcomes societal transformation by resolutely remaining at the forefront of technological evolution and deliberately "Attracting Tomorrow." It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK's comprehensive, innovation-driven portfolio features passive components such as ceramic, aluminum electrolytic and film capacitors, as well as magnetics, high-frequency, and piezo and protection devices. The product spectrum also includes sensors and sensor systems such as temperature and pressure, magnetic, and MEMS sensors. In addition, TDK provides power supplies and energy devices, magnetic heads and more. These products are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, TDK Qeexo, Tronics and TDK-Lambda. TDK focuses on demanding markets in automotive, industrial and consumer electronics, and information and communication technology. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2022, TDK posted total sales of USD 15.6 billion and employed about 117,000 people worldwide.

About Qeexo

Qeexo, a TDK Group Company, is the first company to automate end-to-end machine learning for embedded edge devices (Cortex M0-M4 class). Its one-click, fully automated Qeexo AutoML platform allows customers to leverage sensor data to rapidly build machine learning solutions for highly constrained environments with applications in industrial, IoT, wearables, automotive, mobile, and more. Over 300 million devices worldwide are equipped with AI built on Qeexo AutoML. Delivering high performance, solutions built with Qeexo AutoML are optimized to have ultra-low latency, ultra-low power consumption, and an incredibly small memory footprint. https://qeexo.tdk.com



Images related to this release can be downloaded from the following URL: <u>https://www.tdk.com/en/news_center/press/20230314_02.html</u> Further information on the products can be found under <u>https://geexo.tdk.com</u>

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