SAR Insight & Consulting

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Tiny Machine Learning surges as OEMs add voice interfaces

OEMs are gearing up to add voice interface to their brands, according to expert analysis by SAR Insight & Consulting.

The latest report from the market intelligence firm— *'Tiny Machine Learning and Audio: Technology & Hardware Market Sizing'*—explores market opportunities across 51 end-market devices, including detailed forecasts for adoption for audio machine learning, always listening, battery-powered and non-audio machine learning.

While high-end (and costly) machine learning in the data-center captures the public mindshare, the adaptation of machine learning inference in the end device, the embedded edge, proceeds with great haste as developers and chip vendors evolve the ecosystem through endless innovation.

"At the simplest level, OEMs can implement anomaly detection with as little as 10kB of flash and 10kB of SRAM," Joe Hoffman, SAR Insight Director of Intelligent Edge & Sensor Technologies, said. "The AutoML and MCU chip vendors make it easy to explore ways to add competitive value for a variety of use cases."

Covering markets ranging from home white goods to automotive infotainment to earbuds, SAR Insight forecasts 45 billion consumer devices will refresh, upgrade, and evolve to incorporate machine learning, deploying the coveted Audio HMI wherever possible.

"You might think an optimized $29 IP camera would be difficult to incorporate machine learning," Joe said. "Inside the SoC ASIC controlling the device is an MCU, and we expect the fast-moving chip vendors to expand and refresh the capability by adding machine learning to the SoC."

Smartphone and computing platforms already incorporate machine learning, and the rest of the consumer market is well on the way to implementing a voice HMI.

"Imagine if we had voice HMI 20 years ago when people couldn't program their VCRs," Joe said. "Or take the case of Wi-Fi routers, where most of the returns are because consumers failed to configure properly. Voice HMI will be everywhere, and not just for smart speakers."

These findings are from SAR Insight & Consulting's recently published study on '*Tiny Machine Learning and Audio:* Technology & Hardware Market Sizing,' published as part of its Embedded Edge service.

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Note to editors: SAR Insight & Consulting provides detailed quantitative and qualitative research on established and emerging technology markets across multiple end applications. www.sarinsight.com