October 8, 2024

Efabless Unveils New Custom Chip Platform Designed for Edge ML Products

- Achieve a 10x improvement in performance and power efficiency compared to current solutions
- Partnership with SensiML delivers a complete end-to-end solution for ML edge applications such as keyword spotting

PALO ALTO, Calif., Oct. 08, 2024 (GLOBE NEWSWIRE) -- Efabless Corporation, the creator platform for chips, today announced the launch of chipIgnite ML, a new system-on-chip (SoC) platform. This empowers developers to create custom silicon solutions ten times more efficient than traditional off-the-shelf hardware, redefining possibilities for edge Machine Learning (ML) applications.

Designed with ML in mind, the SoC platform offers dedicated functionality, which can be accessed using SensiML's development tools. This integration allows developers to reduce development time and maximize the ML capabilities for edge applications. By leveraging these tools, engineers can efficiently deploy advanced ML models on custom silicon tailored to specific edge use cases, ensuring scalable and effective solutions such as keyword spotting.

Power and Performance for Edge ML Applications
The new SoC platform delivers an impressive 10x improvement in power efficiency and performance compared to microcontrollers (MCUs) with general-purpose Neural Processing Units (NPUs). This allows developers to optimize performance while reducing power consumption, which is crucial for battery-operated edge devices.

"With our chipIgnite ML custom silicon platform, developers can create solutions that are perfectly tailored to their edge applications, offering significantly improved power efficiency and performance compared to existing solutions," said Mohamed Kassem, CTO at Efabless. "This creates numerous opportunities for specialized ML edge applications that require both optimal performance and reduced power consumption."

Partnership with SensiML
Efabless and SensiML have joined forces to deliver an open source enabled hardware and software solution for ML edge processing in IoT applications. SensiML's AutoML platform enables embedded developers—regardless of their data science experience—to quickly create ultra-efficient sensor inference algorithms that run autonomously on resource-limited edge devices. Similarly, Efabless equips developers with easy-to-use, open-source tools to design optimized custom SoCs without requiring deep expertise in IC design. Together, Efabless and SensiML are eliminating two of the biggest barriers to IoT innovation by providing a seamless path from development to deployment.

Key Benefits

- **Unmatched Performance:** Leverage chipIgnite ML custom silicon platform to achieve dramatically faster performance compared to traditional MCU-based solutions.
- **Optimized Power Efficiency:** Reduce power consumption by 10x, enabling longer battery life.
- **Tailored Solutions:** Our combined expertise allows you to customize your silicon design to meet the specific requirements of your edge ML applications. Profiling and optimization of ML inference workloads can be accomplished in pre-hardware simulation to assist in sizing inference models appropriately.
- **Seamless Integration:** Benefit from a complete development path, from data to silicon, powered by Efabless and SensiML.
- **Open-Source:** Open-source hardware and software development tools provide transparency, customization, and a cost-effective path to ML at the edge products.

"We're excited to collaborate with Efabless to offer a comprehensive development pathway for intelligent edge devices," said Chris Rogers, CEO of SensiML. "By combining our strengths, this joint platform tackles the complex hardware and software challenges developers face, enabling the creation of truly differentiated IoT edge sensing products and applications."

Availability
Efabless has already taped out the chipIgnite ML, marking a major milestone in the platform's development. A design kit will be available for early evaluation starting in November 2024, providing developers with the tools they need to explore and design using the platform. The first shuttle for prototyping is scheduled for April 2025, with full-scale production expected to follow.

The introduction of this chipIgnite ML platform marks a significant advancement in the field of edge ML applications, giving innovators the ability to design custom silicon that delivers both performance and power efficiency, all at a fraction of the cost traditionally associated with custom hardware.

For more information about Efabless' SoC platform and partnership with SensiML, please visit www.efabless.com/chipignite-ml

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 a growing list of hardware including 8/16/32-bit MCUs from Microchip®, Arm® Cortex®-M class and higher microcontroller cores, Intel® x86 instruction set processors, and heterogeneous core AI/ML optimized SoCs. For more information, visit https://sensiml.com.

About Efabless
Efabless offers a platform applying open source and community models to enable a global community of chip experts and non-experts to collaboratively design, share, prototype and commercialize special purpose chips. Over the past three years, 1,400 designs and six hundred tapeouts have been executed on Efabless. The company's customers include

startups, Fortune 500 companies, universities, and research institutions around the world. For more information, please visit www.efabless.com.

Press Contact:
Andrea Vedanayagam
andrea@efabless.com
408.656.4494

Source: Efabless Corporation; SensiML