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Raspberry Pi Gets Better CPU. WiFi

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1x1mm Computer Unveiled bv IBM

IBM Think 2018 is in full swing, with day one being headlined by a yet-unnamed computer smaller than a grain of salt. Being positioned as a crypto-anchor, IBM envisions a future where ultra-cheap chip consisting of several hundreds of thousands of transistors to market are going to "do more than authenticate physical goods

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TALK TO US

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AI Chip Startup SambaNova Snags $56

Artificial intelligence chip startup SambaNova has taken on $56 million in Series A funding from of investors led by Google's venture capital arm and Walden International.

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Raspberry Pi Gets Better CPU, WiF

LONDON — The Raspberry Pi Foundation launched the latest version of its module featuring significant improvements in performance, wireless connectivity and wireless circuitry certification to enable users to reduce the cost of conformance testing.

The new Raspberry Pi 3 Model B+, which maintains the $35 price tag of the previous model, features a 1.4GHz 64-bit quad-core ARM Cortex-A53 CPU, dual-band 802.11ac wireless LAN and Bluetooth 4.2, faster Ethernet (Gigabit Ethernet over USB 2.0), power-over-Ethernet support (with separate PoE HAT) and improved thermal management. Alongside a 200MHz increase in peak CPU clock frequency, the company says the new module has roughly three times the wired and wireless network throughput, and the ability to sustain high performance for much longer periods.

Foundry Pursues Custom Path

The SkyWater 200mm foundry in an office park outside the Mall of America in Bloomington, Minnesota, shows avenues for growth making semiconductors at 90nm and larger nodes, far from the bleeding-edge pursuit of Moore's law.

Built in 1986 by Control Data and purchased by Cypress in 1991, the facility first opened to outside work under the Cypress name in 2008. A year ago, the fab was sold for $30 million to a private equity firm, creating the independent foundry.

SkyWater's fab produces about 45,000 wafers per quarter, compared to 80,000 per month for the 300mm Fab 8 at GlobalFoundries. It has tools on-site for 65nm production, but has no near-term plans for the finer process.

As a private company, SkyWater doesn't disclose its finances, but Thomas Sonderman, its president, said the foundry's revenues are measured in the "hundreds of millions" of dollars annually. That's roughly two orders of magnitude below foundry leader TSMC, but at a 30 percent CAGR SkyWater is outpacing the industry median of 1-2 percent growth for 200mm fabs and 8 percent for 300mm fabs.

1x1mm Computer Unveiled By IBM

IBM Think 2018 is in full swing, with day one being headlined by a yet-unnamed computer smaller than a grain of salt. Being positioned as a crypto-anchor, IBM envisions a future where ultra-cheap chip consisting of several hundreds of thousands of transistors to market are going to "do more than authenticate physical goods."

According to IBM, the miniscule computing platform will be able to "monitor, analyze, communicate, and even act on data" while coming at a manufacturing cost of less than $0.10 USD. It is intended to prevent counterfeiting of products, utilizing blockchain tech to enable "new solutions that tackle food safety, authenticity of manufactured components, genetically modified products, identification of counterfeit objects and provenance of luxury goods."

While just a prototype at this stage, IBM Head of Research Arvind Krishna envisions a future filled of cryptographic anchors such as this easy-to-lose chip being integrated into "everyday objects and devices," owing to its low cost.

IBM Boosts Machine Learning Speeds

TORONTO — IBM wants to make machine learning as fast as snapping your fingers. At its own IBM THINK conference this week, IBM Research unveiled a newly published benchmark using an online advertising dataset released by Criteo Labs of more than 4 billion training examples. IBM was able to train a logistic regression classifier in 91.5 seconds — 46 times faster than the best result that has been previously reported, which used TensorFlow on Google Cloud Platform to train the same model in 70 minutes.

In a telephone briefing with EE Times, IBM Research's manager for non-volatile memory, Haris Pozidis, said the results outlined in the recent paper are a culmination of nearly two years woth of work. "When we started off, it was to make machine learning accessible to people and also make machine learning much faster than what it was and what it is today," Pozidis said.

AI Chip Startup Sambanova Snags $56 Million In Funding

SAN FRANCISCO — Artificial intelligence chip startup SambaNova has taken on $56 million in Series A funding from of investors led by Google's venture capital arm and Walden International.

SambaNova (Palo Alto, Calif.), founded last year by a pair of Stanford University professors and the former head of processor development at Oracle and Sun Microsystems, is based largely on DARPA-funded research by the two professors on efficient AI processing.

Kunle Olukotun, a SambaNova co-founder and the company's chief technology officer, said in a press statement that the company's innovations in machine-learning algorithms and software-defined hardware would dramatically improve the performance and capability of intelligent applications.