# FutureHorizons

# **FH MONDAY**

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Startup AI Chip Passes India Startup Preps RISC-AI Startup Hires Two Tesla V. AI Cores Road Test EEs A startup in India announced Esperanto Technologies Inc. A startup will sample before ambitious plans to design and hired two senior engineering June a 13-W machinelicense RISC-V-based managers from Tesla's learning accelerator for cars, processor cores as well as Autopilot group. David Glasco robots, and drones said to deep-learning accelerators and Dan Bailey will head up handily beat Nvidia GPUs in and SoC design tools. InCore engineering for the startup recognizing images. Visteon is Semiconductors will make its working on high-end RISC-V considering using the chip in first cores available before the cores and processors, future automotive systems end of the year. targeting deep-learning and based on test results on an general-purpose jobs. FPGA version of the device. read more read more read more FutureHorizons TALK TO US **Top Chip Companies** India's \$700 million **Outpacing Market Growth** Supercomputer to be unveiled **EVENTS** Finally, after three years there is some news about it. India is Silicon Chip Industry Eleven of the top 15 chip expected to have its first suppliers in terms of sales in Seminar supercomputer by December this the first half of this year year. Three years ago, in March - 12 Nov 2018 - London UK posted double digit year-over-2015, the Indian government has year growth, with seven of approved a seven-year National Industry Forecast Briefing them growing by more than Supercomputing Mission (NSM) 20%.... - 18 Sept 2018 - London UK supercomputing program which will comprise a supercomputing DON'T MISS OUT.grid of 70 geographically-BOOK NOW BY distributed high-performance computing centers linked over a CALLING high-speed network. +44 1732 740440 read more read more OR EMAIL mail@futuraharizana aam

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# AI Startup Hires Two Tesla EEs

CUPERTINO, Calif. — Esperanto Technologies Inc. hired two senior engineering managers from Tesla's Autopilot group. David Glasco and Dan Bailey will head up engineering for the startup working on high-end RISC-V cores and processors, targeting deep-learning and general-purpose jobs.

The news comes at the opening here of Hot Chips, one of the top gatherings of microprocessor designers. As many as half the talks at this year's event focus on machine learning, reflecting the race to design silicon accelerators for the emerging style of computing.

At the event, startup Tachyum will detail ambitious plans for processors that most closely rival Esperanto. It will describe a family of 16-64 core SoCs it claims outperforms Intel's Xeon, and a water-cooled, 64-core version with 32 GBytes HBM3 for AI, all taping out next year.

### **Startup AI Chip Passes Road Test**

SAN JOSE, Calif. — A startup will sample before June a 13-W machine-learning accelerator for cars, robots, and drones said to handily beat Nvidia GPUs in recognizing images. Visteon is considering using the chip in future automotive systems based on test results on an FPGA version of the device.

AlphalCs designed an instruction set architecture (ISA) optimized for deep-learning, reinforcement-learning, and other machine-learning tasks. The startup aims to produce a family of chips with 16 to 256 cores, roughly spanning 2 W to 200 W.

The market is already getting crowded with AI accelerators from startups and established companies, but money is still flowing into the space because AI represents a historic shift in computing. Rather than try to build large arrays of multiple-accumulate units as many early AI startups did, AlphaICs is part of an emerging group of startups that aims to take a broader look at a wider class of machine-learning algorithms and ways to speed them up.

### India Startup Preps RISC-V, AI Cores

SAN JOSE, Calif. — A startup in India announced ambitious plans to design and license RISC-V-based processor cores as well as deep-learning accelerators and SoC design tools. InCore Semiconductors will make its first cores available before the end of the year.

The effort marks a small but significant addition to the RISC-V ecosystem. It shows that the initiative is gaining global interest for its open-source instruction set architecture as an alternative to offerings from Arm and other traditional suppliers.

InCore spun out of the Shakti processor research team at IIT-Madras, leveraging research in machine learning at its Robert Bosch AI Centre. So far, it is funding itself with revenues from providing commercial support for Shakti cores, according to G. S. Madhusudan, chief executive of InCore and a principal scientist at IIT-Madras.

# **Top Chip Companies Outpacing Market Growth**

SAN FRANCISCO — Eleven of the top 15 chip suppliers in terms of sales in the first half of this year posted double digit year-over-year growth, with seven of them growing by more than 20%.

Of the seven top 15 companies that grew by more than 20%, five of them were memory suppliers Samsung Electronics, SK Hynix, Micron Technology, Toshiba and Western Digital (SanDisk). Non-memory firms Nvidia and STMicroelectronics also grew by more than 20%.

Overall, sales for the top 15 suppliers in the first half of the year were up 24% in the first half of the year compared with the first half of 2017. By contrast, the overall semiconductor market was up 20% year-over-year in the first half of 2018.

### India's \$700 Million Supercomputer To Be Unveiled By Year End

BENGALURU — Finally, after three years there is some news about it. India is expected to have its first supercomputer by December this year.

Three years ago, in March 2015, the Indian government has approved a seven-year National Supercomputing Mission (NSM) supercomputing program which will comprise a supercomputing grid of 70 geographically-distributed high-performance computing centers linked over a high-speed network. This was estimated to cost about \$700 million (₹4,500-crore). But until March this year, just a measly sum of \$30 million had been disbursed, which had made the going pretty tough.

The entire project was shrouded in a deathly silence – not because of any top secrecy element attached to it but simply because no one seemed to know anything about it.