



Architect new AI/ML Processors and Implementing in Data Centers and Edge Device

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**Mirabilis Design unveils the first rapid prototyping platform for
AI Processors and Intelligent Systems**

Sunnyvale, CA. — January 30, 2020 — Mirabilis Design announces the release of VisualSim AI Designer that accelerates new AI-based product development, eliminate surprise during integration by identifying all potential performance and power issues, and meet the requirements. This software solution can be used for quick architecture exploration of electronics and, embedded software that implements Artificial Intelligence (AI) and Machine Learning. This AI evaluator accelerates the deployment of new generation devices by providing a large library of components to quickly prototype, simulate, analyze and optimize the processing, communication and storage. Example of application prototype constructed with this environment include 5G base-stations, mobiles, autonomous driving, medical systems, Intelligent processors, Industrial IoT and consumer electronics.

A unique aspect of this prototyping platform is that it incorporates all aspects of the system including the software, accelerators, cache structures, processor, memories, buses, networks, SSD, MEMS, RF, analog and peripherals. VisualSim AI Designer can help identify areas for AI acceleration, define the AI architecture including the memory access, bus interface and the application partitioning across multiple processing tiles, and compare different AI approaches and semiconductors. This prototype can become the specification for product development and the platform for early software definition and development.

Unlike an FPGA prototype or a software model, the VisualSim prototype can be probed to view the system internals such as buffer usage, resource efficiency, system reliability, power consumption and security features. Also, these VisualSim prototypes are built prior to any development, thus gaining insight into project schedule, resource requirements, potential verification zones and early demonstrator. VisualSim models are constructed in a graphical environment using pre-defined parameterized building blocks, simulated, and analyzed using over 500 statistical reports.

Using VisualSim AI Evaluator, architects and thought-leaders can design custom accelerators, partition the application into AI, processor and FPGA, and determine the implementation, topology, system sizing and memory access. The design criteria are based on use-cases and traffic input; and the generated statistics provides insight into deadlocks, system bottlenecks and requirements matching.



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This VisualSim AI Evaluator contains four different modeling technologies, a Discrete-Event Simulation with 90 million events per second, interactive visualization and human-readable documentation output. The modeling technologies include:

1. Library of analog components, memories, queues, buses, protocols, multi-core, GPUs, FPGAs, ASICs, CPUs, accelerators, and High-Performance Computing (HPC) structures
2. Task graph modeling components to emulate the application
3. Analysis tools for task tracing, deadline monitors, memory access, data overload and efficiency
4. Use-case and traffic generators to emulate the environment and input streams.

VisualSim AI Designer is fully integrated with the industry-standard VisualSim Architect, a system-level modeling and simulation software that is used to evaluate the timing, throughput, power consumption and functional correctness of the design. Systems designed in VisualSim include x86 processor, GPU, FPGA adventure cameras, radars, flight avionics, HPC, automotive electronic control units and aerospace networks. VisualSim Architect 2010 is available on Windows, Linux, and MAC OS.

About Mirabilis Design

Mirabilis Design, a Silicon Valley company, designs cutting edge software solutions that identify and eliminate risks in product performance. Its flagship product, VisualSim Architect is a system-level modeling, simulation, and analysis environment that relies on libraries and application templates to vastly improve model construction and time required for analysis. The seamless design framework facilitates designers to work on a design together, cohesively, to meet an intermeshed time and power requirements. It is typically used for maximum results, early in the design stage, parallel to the development of the product's written specification. It precedes implementation stages - RTL, software code, or schematic – rendering greater design flexibility.

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