Colorado State University's Information Science and Technology Center (ISTeC)
presents <u>two</u> lectures by

Steve Leibson

Technology Evangelist, Tensilica, Inc.

ISTeC Distinguished Lecture

in conjunction with the
Electrical and Computer Engineering Department and
Computer Science Department Seminar Series

"Challenges for Consumer Electronics in the 21st Century"

Monday, October 1, 2007
Reception: 10:30 a.m.
Lecture: 11:00 – 12:00 noon
LSC Grey Rock Room

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Joint Electrical and Computer Engineering Department and Computer Science Department Special Seminar
sponsored by ISTeC

"Everything You Know About Microprocessors and Systems Design is Wrong for SOC Design"

Tuesday, October 2, 2007
Lecture: 9:30 – 10:30 a.m.
Engineering Building Room B3

ABSTRACTS

“Challenges for Consumer Electronics in the 21st Century”
The era of perpetual and nomadic connection to information and entertainment sources is upon us. Wireless and wired connections rain audio, video, and data into every conceivable type of consumer device, ranging from mobile telephone handsets to PDAs to cameras, camcorders, media players, and video games. Omnipresent video screens appear in your home, in airports, in bars, and even at individual tables in restaurants and gasoline pumps. The future belongs to a broad spectrum of connected devices delivering myriad combinations of sound, image, video, and data over a wide range of channels with varied bandwidths. The major challenges in delivering these new consumer products involve the development of smart, adaptable, low-power systems that can deliver high-quality user experiences while compensating for the imperfections of peripheral components such as inexpensive lenses, less-than-ideal display technologies, and tiny sound drivers. Moore’s Law has laid a transistor bounty at the feet of every system architect but the systems being designed today continue to suffer from self-inflicted bottlenecks. The industry seeks ways to fully exploit those billions of on-chip transistors; there is a vast opportunity to develop new system architectures and system-design methodologies that can fully exploit this bounty of Moore’s Law.

“Everything You Know About Microprocessors and Systems Design is Wrong for SOC Design”
Many system-engineering concepts and “best practices” with respect to system design are no longer valid at the chip level. This talk will discuss and openly question several of these outdated system-design concepts and “best practices” including:

- Amdahl’s Law, which does not apply to embedded system design
- Moore’s Law, which no longer gives us faster chips that consume less energy each year
- Processors, which are no longer expensive or slow
- Wires, which are no longer faster than gates
- Buses, which conserve wires at the expense of clock frequency and resource conflicts

SPEAKER BIOGRAPHY

Steven Leibson is the Technology Evangelist for Tensilica, Inc. He formerly served as the Vice President of Content and Editor in Chief of the Microprocessor Report, Editor in Chief of EDN Magazine, and Founding Editor in Chief of Embedded Developers Journal magazine. He has conducted many seminars and tutorials on system design around the world, has written hundreds of articles that appeared in many of the world’s industry trade magazines, and has won many industry awards for his writing. He published the book “Designing SOCs with Configured Cores” in 2006, which discusses the concepts of IP-driven and processor-centric SOC design for the 21st century. This book advocates across-the-board advances in system design, leaving behind antiquated ASIC design styles that are now almost two decades old. Leibson received his degree from Case Western Reserve University and worked in industry as a design engineer and engineering manager for leading-edge system-design companies including as Hewlett-Packard and Cadnetix. Leibson is an IEEE Senior Member.

To arrange a meeting with the speaker, please contact MaryAnn Stroub at (970) 491-2708 or mstroub@engr.colostate.edu

ISTeC (Information Science and Technology Center) is a university-wide organization for promoting, facilitating, and enhancing CSU’s research, education, and outreach activities pertaining to the design and innovative application of computer, communication, and information systems. For more information please see ISTeC.ColoState.edu.