



**NATEA** - SILICON VALLEY

## **May 2007 SIGSoft Seminar**

**TOPIC:** Multicore Overview and Introduction  
**DATE:** Thursday, May 24, 2007  
**TIME:** 6:30 PM ~ 9:00PM  
**LOCATION:** Squire Sanders Law Firm  
600 Hansen Way,  
Palo Alto, CA 94304  
**REGISTRATION:** Free for NATEA members,  
\$5 for non-members  
Dinner will be served by reservation  
**Host** NATEA SIGSoft

### **Abstract**

This talk is to give a basic overview of multicore architectures. Traditionally, increasing clock frequency is one of the main dimensions for conventional processors to achieve higher performance gains. Today, increasing clock frequency has reached a point of diminishing returns—and even negative returns if power is taken into account. Multicore processors, also known as chip multi-processors (CMPs), promise a power-efficiency way to increase performance and become prevalent in vendors' solutions, for example, IBM CELL Broadband Engine processors, Intel Core 2 Dual processors, Sun UltraSPARC T1 processors, and so on. The trend of multicore processors brings a paradigm shift in applications development. In order to fully explore the potential of multicore processors, the application or algorithm development process must be significantly changed. This talk will also to discuss related challenges in application developments and programming environments. Finally, this talk will give a brief overview of the upcoming NFIC on "Multicore—the New Face of Computing: Promises and Challenges."

### **Speaker's Bio**

Dr. Yen-Kuang Chen received his B.S. degree from National Taiwan University and his Ph.D. from Princeton University. He is a Principal Engineer at Intel Corporation. His research interests include developing innovative multimedia applications, studying the performance bottleneck in current computers, and designing next generation microprocessor/platform---including next-generation many-core processors. He has 10+ US patents, 25+ pending patent applications, and 75+ technical publications. He is one of the key contributors to Supplemental Streaming SIMD Extension 3. As an expert in video compression and computer architecture for emerging applications (e.g., SIMD and multi-threading), he is an invited speaker to 2005 Emerging Information Technology Conference, 2005 New Technology Business Opportunities Forum, 2004 Sino-American Technology & Engineering Conference, and 2003 Workshop on Media and Signal Processors for Embedded Systems and SoCs. He is an associate editor of the Journal of VLSI Signal Processing Systems (including a special issue on "Multicore Enabled Multimedia Applications & Architectures".) and of IEEE Transactions on Circuit and System I. He has served as a program committee member of 20+ international conferences and workshops on multimedia, video communication, image processing, VLSI circuits and systems, parallel processing, and software optimization.

He is an IEEE Senior Member, an ACM Senior Member, and a NATEA Lifetime Member.