

## **Kurstillfälle i Västerås!**

### ***Advanced Concepts and Recent Advances in Multi-Core Systems***

**Datum:** 30-31 maj, Västerås

**Föreläsare:** Joel Huselius, Ph D

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#### **Seminar description**

During the seminar we will go through advanced topics in multi-core and review recent state-of-the-art research on several different areas, including, e.g., real-time scheduling, synchronization, virtualization and more.

The seminar is highly theoretical and will be divided in theoretical presentations and discussions on recent research topics. The discussions may delve deeper into some topics depending on the seminar participants. Knowledge in C and some other low-level language (e.g., and assembly language) will be beneficial for this seminar. Some of the topics that will be covered are:

- **Problems, challenges and pitfalls of parallel systems.**
- **Specific hardware examples – recent hardware trends and new multi-core hardwares.**
- **Memory models with some examples from recent multi-core hardwares. Recent research such as, e.g., vNUMA.**
- **Low level programming details such as cache alignment, false sharing, cache thrashing, cache line bouncing, spinlocks. Recent trends and results such as, e.g., priority inheritance spinlocks and software transactional memory (STM).**
- **Design issues such as multi-processor task scheduling, priority inversion, synchronization, parallel languages etc, with several research trends and results.**
- **Virtualization, hypervisors, virtualization hardware support etc.**
- **Software development techniques such as parallel patterns, performance modeling, performance profiling, etc.**

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**Välkommen med din anmälan!**