Curriculum Vitae

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Education

2002– Ph.D. student at Blekinge Institute of Technology, Sweden.

- Research on SMP operating system porting.
- Research member of the Parallel Architecture and Applications for Real-Time systems group.

1998–2002 MA of Computer Science, Lund University, Sweden.

- Specialization: Operating systems, compiler construction.

1996–2000 BA of Human Geography, Lund University, Sweden.

Work experience

Fall 2002– Blekinge Institute of Technology, Sweden

- Implementor of SMP support for the Dicos operating system kernel in the TSP system (`www.telorb.com`) on Intel IA-32 hardware.
- (Ongoing) Implementor of a operating system port to the Xen hypervisor
- Lecturing and assisting undergraduate students in low-level programming (MIPS and Intel IA-32 assembly) and game programming courses.

Summer 2001, spring 2002 University of Karlsruhe, Germany.

- Research student the Systems Architecture group, system-level work with the L4Ka::Hazelnut microkernel.
- As MSc. thesis, a device driver framework for the Prime multiserver operating system was designed and implemented. The device driver framework handles virtual to physical address translation through a hierarchy of memory servers as well as time-limited memory pinning for DMA.
- The Qt/Embedded library was ported to run directly on top of the L4Ka::Hazelnut kernel, with a minimal libc implemented and drivers for SVGA graphics and terminal input.

Summers 2000, 2002 Axis communications, Lund, Sweden.

- Implementation work for Linux-based network cameras.
- Monitoring extensions, bug fixes and test programs for the Linux journalling flash file system (JFFS) was implemented.
- A presentation tool which displays video feeds from multiple network cameras was implemented. The tool also does image analysis in real-time to discard uninteresting image feeds.
- Infrastructure support for motion detection alarm delivery as well as tools for delivering TCP and UDP alarms was added to the Axis network cameras.

Other Participation in open source projects

- Implementor of the libghthash C hash table library (`www.ipd.bth.se/ska/sim_home/libghthash.html`)
- Misc. work on the Linux kernel and userland for the Psion 5MX (`www.ipd.bth.se/ska/sim_home/psion.html`)
- Games and work on the development environment for the REX 6000 `www.ipd.bth.se/ska/sim_home/rex.html`)

Publications

[1] S. Kågström. *Performance and Implementation Complexity in Multiprocessor Operating System Kernels*. Blekinge Institute of Technology, Ronneby, Sweden, 2005. Licentiate Dissertation Series No. 2005:15.

[2] S. Kågström, H. Grahn, and L. Lundberg. Automatic low overhead program instrumentation with the LOPI framework. In *Proceedings of the 9th Workshop on Interaction between Compilers and Computer Architectures*, San Francisco, CA, USA, February 2005.

[3] S. Kågström, H. Grahn, and L. Lundberg. Experiences from implementing multiprocessor support for an industrial operating system kernel. In *Proceedings of the International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA'2005)*, pages 365–368, Hong Kong, China, August 2005.

[4] S. Kågström, L. Lundberg, and H. Grahn. The application kernel approach - a novel approach for adding SMP support to uniprocessor operating systems. To appear in Software - Practice and Experience.

[5] S. Kågström, L. Lundberg, and H. Grahn. A novel method for adding multiprocessor support to a large and complex uniprocessor kernel. In *Proceedings of the 18th International Parallel and Distributed Processing Symposium (IPDPS 2004)*, Santa Fe, NM, USA, April 2004.