

Curriculum Vitæ and Teaching Portfolio

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This document is divided into two parts; The first part describes quantitatively my educational experience and the second part describes my pedagogic ambitions and reflections on those.

1 Quantitative description and facts

1.1 Personal

- Born 11:th October 1971 in Lund, Sweden
- Married with Linda and three children (Xerxes, Zacharina and Majken)
- Knowledge of languages: Swedish, English, Czech (conversational) and German (conversational)

1.2 Own education

1987-1991	Upper secondary school, Technical gymnasium
1992-1995	University studies; Bachelor of Science in Applied Computer Engineering at Mdh
1995-2001	Misc courses in computer engineering
1996	Mdh's Pedagogic introduction course step I
1998	ARTES summer school for PhD students
1999	Mdh's Pedagogic introduction course step II
2000-2001	"Personal leadership", individual course by Ulf Nässén
2002	Participated on national conference "The welcoming university", Gothenburg
2002	Licentiate degree
2002	"Learning with Information Communication Technology (IKT)" — pedagogic course

1.3 Pedagogical qualifications

Academic course realization and development

Sebek has held and developed courses in different areas of computer science and computer engineering at A–D levels. Sebek has been nominated as best teacher at IDt in 1998.

1995-2003	Programming in C	Assistant and lecturer several times
1995	VLSI-construction	Assistent
1995	Microprocessor design II	Some lectures
1995-2002	Advanced computer architecture	Developed course, lecturer several times
1996	Distributed systems	Modernized and held course
1997-1998	Data communication and computer networks	Developed and held course several times
1998	Data structures and algorithms	Modernized and held course
2000	Introduction to computer engineering	Developed (group of teachers) and held course
2001	Distributed RTS	sub project responsible (teacher)
2001-2003	Introduction to computer science	Developed and held course several times
2003	Computer Architecture, Basic course	Developed and held course
2003	Programming in Visual Basic .NET	Course assistant

Courses to industry

1996	ABB Industrial systems, Västerås	Computer Architecture	IDt, MdH
1996	ABB Industrial systems, Västerås	Computer Networks	IDt, MdH
2000	Ericsson UAB, Älvsjö	Computer Architecture	Realfast AB
2000	Ericsson UAB, Älvsjö	Computer Architecture	Realfast AB
2001	Ericsson Radio Systems AB, Nackastrand	Computer Architecture	Realfast AB

Academic positions and pedagogic work

1996-	Tutor and supervisor at several undergraduate thesis at C/D level
1996-1998	Board member of the MdH IT-council
1996-2001	Board member of the MdH pedagogic council
1997-1999	Participant and lecturer of the pedagogic seminar series "the good example"
1997	Software "Flopp" – executing flow charts interpreter
1997	Developed the undergraduate education program of computer engineering (group at IDt)
1998	Software "Näve" – web-based course evaluation tool
1998-2001	Member of the department board (Institutionsstyrelse)
1999	Programme director of computer engineering
1999-2000	Director of undergraduate studies
2001	Head of laboratory – CAL/IDt. (Shared)
2002-	Member of the graduate engineer program board (Programstyrelse för civilingenjörsprogrammet)
2002-	Member of the department management group (Ledningsgrupp)
2002-	Director of undergraduate studies with focus on quality issues
2002-2003	Mentor for bachelor students at the computer engineering programme
2003	Programme director of computer science

1.4 Publications

- *Kompletterande material i datorarkitektur*, Course booklet in computer architecture, Mälardalen University, 1995-1999
- *Konstruktion av små och stora algoritmer*, Course booklet in data structures, algorithm analysis and software development, Mälardalen University, March 1998
- *Cache Memories - an unpredictable hardware component in RTS*, internal report in poster format, Mälardalen University, Sweden, January 1999
- *Att mäta aktivitet ur ett pedagogiskt perspektiv*, internal report, Mälardalen University, Sweden, November 1999
- *Teacher's Guide at IDt*, living internal document, Mälardalen University, 2000-2003.
- *The state of the art in Cache Memories and Real-Time Systems*, Technical Report MRTC 01/37, October 2001
- *Measuring Cache Related Pre-emption Delay on a Multiprocessor Real-Time System*, IEEE/IEE Real-Time Embedded Systems Workshop, London, 3. December 2001
- *The real cost of task pre-emptions — measuring real-time-related cache performance with a HW/SW hybrid technique*, Technical report MRTC 02/57, August 2002 Technical Report MRTC 01/37, October 2001
- *Determining the worst-case cache miss-ratio* (co-written with Jan Gustafsson), IEEE Workshop ES-CODES, San Jose, CA, USA, 24. September 2002
- *Instruction Cache Memory Issues in Real-Time Systems*, Licentiate thesis, MRTC report 02/60, Mälardalen University, Sweden, 11. October 2002
- *Är det varierad examination på Civilingenjörsprogrammet i Elektronik och Datateknik på MdH?*, internal report, Mälardalen University, Sweden, February 2003

2 Qualitative aspects

2.1 Teaching philosophy

I have a very strong belief in the following statements

- *Examination controls the learning process.* If there is no examination of a part in a course very few students will spend time to learn this part since this valuable time can be spent on things that are measured and there by matters.
- The only way to learn something new is to *get your own questions answered* in a way that you understand. This is preferably achieved by the use of old knowledge, experience and terminology. These aspects are individual.
- *It is the students job to learn.* My job as a teacher is to motivate, explain and manage the student to find his best way to learn. It is also my duty to give the student the best chance and opportunity to show that he has learned correctly and enough by offering diversified examination. I can never ever teach a student anything, but I must always try my best and help the student to learn.
- Students are always motivated to learn if they find the subject *fun*. Humans (students) find life fun when they realize that they are making progress. It is the teachers job to frequently show the student which progress the students will and have achieved and relate this to the goals of the education.

2.2 Results and reflections

Since 1995 I have been major teacher in numerous subjects and diversified levels, and this have given me a chance to try out methods to make students to, in lots of aspects, better students. This section will show some good examples to reach this.

Different paths to knowledge

My experince says that very few students reflects over their own learning process and the only way to learn better is to do that. Therefor it is an important task to help the students to learn to learn. The major difficulty is then to make other students and teachers to understand and accept this since many thinks this is not an issue or just “spaced out”¹, which is a pity.

The students in the introductional course for computer scientist freshmen wrote log books over their time and what they actually were doing over that time. With some guidance the students started to write quite well and could also start to reflect over their own learning and education. Many of the students were amazed over their own work they have described in both positive and negative terms. Even if they have gone to school for more than twelve years, some of them had never reflected over what they actually had done in detail(!) One student even thought that this was the best part of the course and that he had learned so much about himself. Some of the students continued to keep a log in the followinf courses to better follow their own progress in the studies on a higher level. For me as a teacher it has been a very good continous feedback on my work and the course contents itself. A simple final survey would never give this kind of feedback since the learning process itself is very often missing. The student never actually understood when he understood the new knowledge but with a written log both the teacher and the student can follow the process and hopefully learn from that next time.

Diversified examination

Since “knowledge” is a property with many aspects it can also be measured in many ways. It is therefor important to really measure (test) aspects of importance. They key question in this case is to decide what is important, and in many cases more than one answer is correct. Also the way to express the answer can be different and suit the students differently. My ambition is to allow many different ways to show that the student has learned and can practice the new knowledge.

¹“Flummigt” in Swedish

- In the course *ct1520 Advanced Computer Architecture*, the students will get their grade when they have learned enough in the subject. Three basic laborative assignments, one oral report and a written exam must be approved to pass the course. The points at the written test with added bonuspoints yields the grade. The bonuspoints can be obtained by solving more advanced laboratory assignments, write more extensive reports, construct own simulators or solve assignments individually or in groups. The student can in this case choose if they want to be examined more theoretically or practically but also receive credit for other aspects such as good skills in presentation techniques and cooperation with other students.

The students have expressed their approval for this concept in the course evaluations.

- In the course *ct3420 Basic Computer Architecture*, the students can choose to solve individual assignments during the course and then present them written to me as a teacher. Since they have three days to solve the problem there is a chance to ask more “open questions” that are possible to ask on a regular final written test. This means also that the students interpret the questions differently than I as a teacher could imagine so they have also the possibility to “defend” their work orally. If the student pass the combined written and oral test they don’t have to solve an assignment in that topic during the final written test. If all the assignments during the course are passed — no final written test has to be done. The assignment about cache memories can be exchanged by constructing a cache simulator instead. This means that the student can choose to either be theoretically examined continuously, or on a final test, or by a more practical assignment.

The possibility to choose a way to show new knowledge has been highly approved by the students. Most of the students chose the continuous path successfully. My own reflection to that is that they though that freedom of choice also gave them a possibility to show their best side which makes the whole education situation more fun.

(not complete — to be done)