

Ánoq of the Sun Detailed CV as a Computer Scientist

Ánoq of the Sun (alias Johnny Bock Andersen), Hardcore Processing *

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Online Link for this Detailed CV

This document is available online in 2 file formats:

- <http://www.hardcoreprocessing.com/home/anoq/cv/anoqcvcomputerscientist.pdf>
- <http://www.hardcoreprocessing.com/home/anoq/cv/anoqcvcomputerscientist.ps>

All My CVs and an Overview

All my CVs (as a computer scientist, musician and graphics artist) and an overview can be found at:

- <http://www.hardcoreprocessing.com/home/anoq/cv/anoqcv.html>

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About the Time Durations in This Detailed CV

- **All time usage is only counted once:**

No projects or courses count the same time or efforts more than once. So for instance, even though CeX3D Converter uses CeXL internally, I have not counted the time used for designing or implementing CeXL twice. Also, the time used for all university projects which are relevant for my company (Hardcore Processing) are only counted once in the project lists.

- **...except for the employment list and the skill list:**

The only exception is that the list of companies where I have been employed counts the total employment time, even though the work done there is also counted in the project lists, but this is clearly stated in the headline for that section. The same goes for the skill list.

- **References to educative material are sometimes repeated:**

Some references to educative material are repeated more than once, when it is relevant for several projects or topics.

- **Duration is considered as full-time work:**

Whenever I write 'Duration' I mean when considered as full-time work:

- *1 day = 7.5 hours*
- *1 week = 5 days*
- *1 month = 22 days*
- *1 year = 12 months*

These durations are sometimes estimates, but most are fairly accurate - and yes, I have generally 'worked' more than full-time in my life, since many of the things I have done are also spare-time interests.

Employment Overview (Updated on 2012-06-03) (Durations Counted Again in Project Lists)

Company	My Role	Dates	Duration <small>1 day=7.5 hrs</small>
Hardcore Processing I founded this company 27th of September 1998 <small>www.hardcoreprocessing.com</small>	Software Developer Graphics Artist Sales and Marketing Webmaster, System Admin.	1998-now	(see project lists)
Freelance work for various companies: e.g. SimCorp, NetGroup, GateHouse	Software Developer Consultant	1998-now	(see project lists)
Ánoq Music I founded this record label December 2007 <small>www.anoq.net/music/label</small>	Music Composer and Producer Music Publishing Promotion	2007-now	(see musician CV)
Prevas (formerly Glaze) <small>www.prevas.dk</small> Worked for various clients, e.g. RTX Telecom and Exensor (Sweden)	Software Developer Consultant	2004-2007	2.5 years
Casper Thorsøe Video Production <small>www.ctvp.com</small>	3D Graphics Artist (Partly System Administrator)	1997-1998	1 year (see graphics CV)
Visionik <small>www.visionik.dk</small>	Software Developer (Partly Graphics Artist)	1997	5 months
Sandlykke & Leifsgård (now called TargIT) <small>www.targit.dk</small>	Software Developer	1994-1996	2 years and 5 months

Human Languages

Laguage	Skill level
English	Read, write, understand, speak <i>fluently</i>
Danish	Read, write, understand, speak <i>fluently</i> - my mother tongue
Northern Juttish (Danish dialect)	Understand, speak <i>fluently</i> (not really a written language)
Modern Greek	Read, write, understand, speak <i>fluently</i>
French	Read, write to some extent, need practice for serious communication
German	Read, write to some extent, need practice for serious communication
Swedish	Read, understand - because it's very similar to Danish
Norwegian	Read, understand - because it's very similar to Danish

List of Software Development Skills (Updated on 2012-06-03) (Years Are Not Full-time Durations, But Years with Active Use)

Key for "Level": 1: Expert, 2: Lots of Routine, 3: Routine, 4: Good Knowledge, 5: Some Knowledge

Skill Name / Group	Doing What	Level (1-5)	Latest Use	Years with Active Use
Programming Languages:				
· Standard ML (a.k.a. SML '97)	Programming	1	2013	16
· CeXL (language that I created)	Programming	1	2007	2
· OCaml (Standard ML dialect)	Programming	3	2002	0.2
· MLFi (OCaml dialect)	Programming	1	2011	2.5
· Haskell (lazy Standard ML dialect)	Programming	4	2003	0
· Scheme, LISP	Programming	4	1999	0.1
· C#	Programming	2	2011	2.5
· Python	Programming	2	2005	1
· Java	Programming	4	2003	0.5
· C	Programming	1	2006	9-15?
· C++	Programming	1	2006	9-12?
· Objective-C ("mix of C and Smalltalk")	Programming	2	1998	2
· Delphi/Pascal	Programming	1	2006	4
· APL	Programming	5	2011	2.5
· RenderMan Shading Language	Programming	1	2007	4
· MEL (Maya Embedded Language)	Scripting	3	1998	1
Other Kinds of Languages:				
· Operational Semantics (prog. lang. specification)	Language Specification	1	2010	8
· Denotational Semantics (prog. lang. proofs)	Language Specification	3	2007	0.5
· BNF-Grammar	Language Specification	1	2010	7
· Regular Expressions	Language Specification	1	2007	7
· COM/CORBA IDL (Interface Definition Lang.)	Programming	4	2001	1
· UML (Unified Modelling Language)	Software Design	2	2011	5
· GNU Make (and OMake and Microsoft NMake)	Writing	3	2011	14?
· HTML	Writing	3	2012	15?
· L ^A T _E X	Writing	1	2012	13
APIs, Interfaces, Protocols (Programming):				
· Standard ML Basis Library	Programming	1	2013	16
· Delphi Visual Component Library	Programming	1	2006	4
· Microsoft .NET Framework	Programming	3	2011	2.5
· OpenStep (MacOS X's API descends from this)	Programming	2	1998	2
· Swing	Programming	4	1997	0.1
· Document Object Model (DOM)	Programming	4	2001	0.1
· TCP/IP (Sockets)	Programming	3	2006	2
· RS232 (PC Serial Port)	Programming	4	2005	1
· Gtk+	Programming	4	2007	0.1
· XLib (X-Windows API)	Programming	5	1999	0.3
· SDL (Simple Direct Media Layer)	Programming	2	2007	7
· DirectX	Programming	4	2001	0.5
· RenderMan (API and RIB-files)	Programming	1	2012	6
· OpenGL	Programming	4	2007	0
· Maya Plugin API	Programming	4	2003	0
· LightWave 3D plugin API	Programming	5	2001	0
Databases (Programming Experience):				
· MySQL	Programming	4	2006	1
· Btrieve, InterBase	Programming	4	1996	2.5
· ODBC (standardized database API)	Programming	4	2001	1
· SQL (Structured Query Language)	Programming	3	2006	3
Operating Systems (Programming Experience):				
· Windows 95/98/NT/XP/Vista/7	Programming	3	2011	9
· Linux	Programming	3	2013	15?
· Silicon Graphics IRIX, Sun Solaris	Programming	5	2001	0.2
Tools, Programs, IDEs, Version Control:				
· I'll not bother listing them, tools are easy to use!				
· Examples: Git, CVS, SVN, Microsoft Visual Studio				
Skills that I Am Not Interested in Using (Or that Are Outdated):				
Basic, Ada, JAM Programming Language (Jyacc App. Manager), MFC (Microsoft Foundation Classes), eXene (user-interface toolkit in Standard ML), Real 3D Programming Language, WML (WAP Markup Language), WMLScript, BeOS, AmigaOS / hardware programming, CyberGraphX (Amiga), DOS.				

List of Projects Related to Software Development (Updated on 2013-10-18)

Key for "Technologies":	
P:	Programming language
L:	Other kind of Language
A:	Application Programmer's Interface (API) or protocol
T:	Software development Tool
O:	Operating system or platform
B:	Significant amount of reading Books
RA:	Significant amount of reading Research Articles

Project	Client	Dates	Duration <small>1 day=7.5 hrs</small>	Technologies
<p>· CeX3D Inverse Advanced computer vision software for automatic construction of 3D objects from ordinary camera images Pure software implementation, written in Standard ML, no gfx hardware used www.cex3d.net/inverse/</p>	<p>Hardcore Processing www.hardcoreprocessing.com 2 DIKU reports www.diku.dk</p>	<p>2009- 2012</p>	<p>3 years and 6 months</p>	<p>Standard ML (P) SML/NJ, MLton (T) SDL, SDL::ML (A) Linux (O) computer vision (RA, B) computer graphics (RA, B)</p>
<p>· Computer Vision Software Designed and implemented high tech computer vision software capable of detecting 3D objects in images and rectifying their surface into 2D at interactive speeds without gfx hardware (150-400ms, incl. load 100kb, save 1Mb).</p>	<p>(confidential)</p>	<p>2013-</p>	<p>4 months</p>	<p>Standard ML (P) MLton (T) Linux (O)</p>
<p>· SimCorp Dimension: Investment management system. Design, documentation of software and development processes. Build-environment, software modules and more implemented in C# and MLFi/OCaml. Automated unit-tests and integration-tests. Integration with software sub-contractor.</p>	<p>SimCorp (Denmark) www.simcorp.com</p>	<p>2008- 2011</p>	<p>2.5 years</p>	<p>MLFi / OCaml, C# (P) .NET Framework (A) MSVS 2005/2008/2010 (T) OMake (T), APL (P) Cygwin (T), Windows (O) documentation, unit-test, specification writing</p>
<p>· CeXL Compiler Design, analysis and implementation of an advanced compiler for the CeXL language, including an advanced typed memory management system (garbage collector) for interactive performance (low pause-times) (unreleased)</p>	<p>Hardcore Processing www.hardcoreprocessing.com 2 DIKU reports www.diku.dk</p>	<p>2009- 2010</p>	<p>7.5 months</p>	<p>Standard ML (P) SML/NJ, MLton (T) C, x86 Assembly (P) GNU Assembler (gas) (T) GNU Make (T), Linux (O) compiler technology (RA, B)</p>
<p>· Ánoq SML Basis Library Design, analysis and implementation of a more consistent and larger version of the Standard ML Basis Library, compatible with both the 1997 and 2004 revisions, turning it into being 2004 compatible www.hardcoreprocessing.com/pro/anoqsmllbasis/ (latest version is still unreleased)</p>	<p>Hardcore Processing www.hardcoreprocessing.com DIKU report www.diku.dk</p>	<p>2003- 2010</p>	<p>2 months</p>	<p>Standard ML (P) SML/NJ, MLton (T) GNU Make (T), Linux (O)</p>

Project	Client	Dates	Duration	Technologies
<ul style="list-style-type: none"> · Fast CeXyMan (new version) interactive 3D renderer, mostly using the RenderMan API (actually RI::ML) internally, pure software rendering 640x480x32bit 20 frames/sec (1.7Ghz P4) written in Standard ML, no gfx hardware used (unreleased) 	Hardcore Processing www.hardcoreprocessing.com	2007-2011	1 month <small>1 day=7.5 hrs</small>	Standard ML (P) SML/NJ, MLton (T) SDL, SDL::ML (A) RI::ML (A) Linux (O)
<ul style="list-style-type: none"> · Global Illumination 3D Volume Renderer (prototype) renders an example with cloud-like procedural volume data www.hardcoreprocessing.com/company/ (under technology examples) 	Hardcore Processing www.hardcoreprocessing.com	2007	1 month	Standard ML (P) SML/NJ, MLton (T) Linux (O) 3D volume rendering (B) global illumination (B) photon mapping (B)
<ul style="list-style-type: none"> · Wireless Headset Tests Worked on-site as consultant. Wireless headset (Bluetooth) tests with mobile phones. C/C++ code proof-reading. Substantial test-specification improvements. 	Client of Prevas (formerly Glaze) (I was employed) www.prevas.dk	2006-2007	10 months	C, C++ (bug-finding) (P) Windows (O) specification writing manual test (never again!)
<ul style="list-style-type: none"> · Several Projects: DECT Product tests Worked mostly on-site (Aalborg) as consultant. Documentation, specification with end-customer. Developed software for test-equipment to do automated hardware product testing, e.g.: Software flash-load, RF-tests, audio-tests, power measurements and software tests. 	RTX Telecom www.rtx.dk Prevas (formerly Glaze) (I was employed) www.prevas.dk	2005-2006	7 months	C, C++ (P) TCP/IP (A) Borland C++ Builder (T) Windows (O) documentation, specification writing
<ul style="list-style-type: none"> · UMRA: Sensor-based vehicle detection system Worked partly on-site in Sweden as consultant. Design, documentation of system interfaces. Real-time multithreaded communication and more implemented in C and Python. Automated unit-test of implementation. Integration with hardware sub-contractor. 	Exensor (Sweden) www.exensor.se Prevas (formerly Glaze) (I was employed) www.prevas.dk	2004-2005	1 year	C, Python (P) TCP/IP, RS232 (A) gcc (T), PC104 (O) Linux, Windows (O) documentation, unit-test, specification writing

Project	Client	Dates	Duration	Technologies
<ul style="list-style-type: none"> · Implement CeXL parser, type-inference, interpreter Latest version unreleased: Parses and type-checks 8000 lines of CeXL code in less than 2 seconds (1.7Ghz P4) www.cex3d.net/cex1/ 	Hardcore Processing www.hardcoreprocessing.com	2003-2004	1.3 months <small>1 day=7.5 hrs</small>	Standard ML (P) CeXL (P) SML/NJ, MLton (T) Linux (O)
<ul style="list-style-type: none"> · Design of CeXL formal specification of an advanced programming language with proof of type-soundness of the core language with its novel record calculus (latest specification is unreleased) www.cex3d.net/cex1/ 	Hardcore Processing www.hardcoreprocessing.com 2 DIKU reports www.diku.dk	1999-2004 and 2010	1 year and 2 months	Standard ML (P) Prog. lang. semantics (RA, B) L ^A T _E X (L)
<ul style="list-style-type: none"> · Software for Hospital Equipment 	GateHouse www.gatehouse.dk (worked on-site at GateHouse's client)	2003	1.5 months	C/C++ (P) UML (L) Rational Rose (T) MS Visual C++ (T) Windows 2000 / CE (O)
<ul style="list-style-type: none"> · CeX3D Converter LightWave 3D/Unreal Ed/RenderMan RIB converter www.cex3d.net/converter/ 	Hardcore Processing www.hardcoreprocessing.com	1999-2001	3 months	Standard ML (P) SML/NJ, MLton (T) gcc, MinGW (T) Linux, Windows (O)
<ul style="list-style-type: none"> · SDL::ML SDL bindings for Standard ML www.hardcoreprocessing.com/pro/sdlml/ 	Hardcore Processing www.hardcoreprocessing.com	1999-2003	1 month	C, Standard ML (P) SDL (A) SML/NJ, MLton, ML Kit (T) gcc, MinGW (T) Linux, Windows (O)
<ul style="list-style-type: none"> · UI::ML as-of-yet unreleased user interface toolkit surpassing AbstractUI::ML 	Hardcore Processing www.hardcoreprocessing.com	2002-2003	2 months	Standard ML (P) SML/NJ, MLton, MinGW (T) SDL, SDL::ML, (A) Linux, Windows (O)
<ul style="list-style-type: none"> · CeX3D SM in-house 3D program for subdivision surfaces www.cex3d.net/sm/ 	Hardcore Processing www.hardcoreprocessing.com	2000-2002	3 months	Standard ML, CeXL (P) SML/NJ, MLton (T) MinGW (T) SDL, SDL::ML, UI::ML (A) RI::ML, Fast CeXyMan (A) Linux, Windows (O)
<ul style="list-style-type: none"> · Implement old CeXL parser, interpreter (used in CeX3D Converter before version 0.5) 	Hardcore Processing www.hardcoreprocessing.com	2000-2002	2 months	Standard ML (P) SML/NJ, MLton (T) Linux (O)

Project	Client	Dates	Duration	Technologies
			1 day=7.5 hrs	
· Internet Payment System (worked on design and implementation)	NetGroup www.netgroup.dk	2001-2002	2 months	C/C++, Standard ML (P) UML, L ^A T _E X (L) LyX, dia (T) Linux (O)
· Interactive Showreel company demo program www.hardcoreprocessing.com/company/showreel/	Hardcore Processing www.hardcoreprocessing.com	2001	5 days	Standard ML (P) SML/NJ, MLton, MinGW (T) SDL, SDL::ML, UI::ML (A) RI::ML, Fast CeXyMan (A) Linux, Windows (O)
· Fast CeXyMan (old version) interactive 3D renderer using the RenderMan API (actually RI::ML) internally. Written in Standard ML	Hardcore Processing www.hardcoreprocessing.com	2000-2002	2 months	Standard ML (P) SML/NJ, MLton, MinGW (T) SDL, SDL::ML (A) RI::ML (A) Linux, Windows (O)
· Standard ML Code generally useful SML code 2D/3D geometry, combinator parsing, etc. www.hardcoreprocessing.com/pro/smlcode/	Hardcore Processing www.hardcoreprocessing.com	1999-2001	1 month	Standard ML (P) SML/NJ, MLton, ML Kit (T) Linux, Windows (O)
· ISAPI Plugins for Zeus Webserver programming	NetGroup www.netgroup.dk	2001	1 week	C (P) HTML (L) ISAPI, CGI (A) gcc, Zeus Webserver, IIS (T) Linux, Windows (O)
· Internet Payment System Client implementation of client and backends, ASP examples, documentation	NetGroup www.netgroup.dk	2000-2001	3 months	C/C++, ASP (P) UML, L ^A T _E X, HTML (L) COM, CGI (A) gcc, MS Visual C++ (T) Zeus Webserver, IIS (T) Linux, Windows (O)
· Misc. Other Programming	NetGroup www.netgroup.dk	2000-2001	1 month	C/C++ (P) HTML (L) CGI, MIME, (A) MS Excel ODBC (A) MS Access ODBC (A) IRIX/POSIX Shared Mem. (A) gcc, MS Visual C++ (T) MS NMake (T) Zeus Webserver, IIS (T) Linux, IRIX, Solaris, Windows (O)
· RI::ML RenderMan Interface for Standard ML www.hardcoreprocessing.com/pro/riml/	Hardcore Processing www.hardcoreprocessing.com	1999-2005	3 weeks	Standard ML (P) RenderMan (A) SML/NJ, MLton, ML Kit (T) Linux (O)

Project	Client	Dates	Duration	Technologies
			1 day=7.5 hrs	
· Rebild Vandrerhjem Website website programming and translation from Danish to English and Greek www.vandrerhjem.net	Rebild Vandrerhjem www.vandrerhjem.net	2001	4 days	HTML (L) Danish, English, Greek (L) Linux, Windows (O)
· ABC Expedition game (programming) www.hardcoreprocessing.com/entertainment/	Virtual Effects & Fantasies www.vef.dk	2000	3 weeks (14 days)	Standard ML (P) SDL, SDL::ML (A) SML/NJ, MLton (T) gcc, MinGW (T) Linux, Windows (O)
· The Unlimited Game game (programming) www.hardcoreprocessing.com/entertainment/	Virtual Effects & Fantasies www.vef.dk	1999	8 days	Standard ML (P) SDL, SDL::ML (A) SML/NJ, MLton, ML Kit (T) gcc, MinGW (T) Linux, Windows (O)
· The Sunkist Puzzle game (programming) www.hardcoreprocessing.com/entertainment/	Virtual Effects & Fantasies www.vef.dk	1999	3 days (25 hours)	C/C++ (P) SDL (A) gcc, MinGW (T) Linux, Windows (O)
· Leaf Invaders game (programming) www.hardcoreprocessing.com/entertainment/	Virtual Effects & Fantasies www.vef.dk	1999	8 days	C/C++ (P) SDL (A) gcc, MinGW (T) Linux, Windows (O)
· Billy The Kid game (programming) www.hardcoreprocessing.com/entertainment/	Virtual Effects & Fantasies www.vef.dk	1999	2 weeks	C/C++ (P) SDL (A) gcc, MinGW (T) Linux, Windows (O)
· Misc. Programming GUI stuff, printer routines, ODBC programming in C++	Context	1999	1 month	C/C++, Delphi Pascal (P) gcc (T) ODBC (A) Delphi, C++ Builder (T) Linux, Windows (O)
· MLton for Windows port of MLton compiler for cross-compiling to Windows www.hardcoreprocessing.com/pro/mltonwin32/	Hardcore Processing www.hardcoreprocessing.com	1999-2003	1 month	C, Standard ML (P) MLton (T) gcc, MinGW (T) Linux, Windows (O)
· ML Kit for Windows port of ML Kit compiler for cross-compiling to Windows www.hardcoreprocessing.com/pro/mlkitwin32/	Hardcore Processing www.hardcoreprocessing.com	1999	2 weeks	C, Standard ML (P) ML Kit (T) gcc, MinGW (T) Linux, Windows (O)

Project	Client	Dates	Duration	Technologies
· WinMain , library for porting to Windows www.hardcoreprocessing.com/pro/winmain/	Hardcore Processing www.hardcoreprocessing.com	1999	3 days 1 day=7.5 hrs	C (P) gcc, MinGW (T) Linux, Windows (O)
· CodeTransformer reads OMG IDL files and C++ header files and generates C++ code www.hardcoreprocessing.com/pro/codetransformer/	Hardcore Processing www.hardcoreprocessing.com	1999	1 month	Standard ML (P) C++, OMG IDL (P) SML/NJ, ML Works (T) ML-Yacc, ML-Lex (L, T) Linux, Windows (O)
· The Construct old user interface builder www.hardcoreprocessing.com/pro/theconstruct/	Hardcore Processing www.hardcoreprocessing.com	1999	2 weeks	Standard ML (P) SML/NJ, ML Works (T) Linux, Windows (O)
· AbstractUI::ML old user interface toolkit www.hardcoreprocessing.com/pro/abstractuiml/	Hardcore Processing www.hardcoreprocessing.com	1998-1999	4 months	Standard ML (P) SML/NJ, ML Works (T) eXene (A) Linux, Windows (O)
· A Small 3D Wireframe Demo test of Standard ML for real-life use www.hardcoreprocessing.com/pro/asmall3dwireframedemo/	Hardcore Processing www.hardcoreprocessing.com	1997-1998	???	Standard ML (P) SML/NJ (T) eXene (A) Linux (O)
· ML Performance Test performance test of SML/NJ vs. gcc www.hardcoreprocessing.com/home/anoq/Programming/MLSpeed.html	Hardcore Processing www.hardcoreprocessing.com	1997-1998	???	Standard ML (P) C, Objective-C (P) SML/NJ, gcc (T) eXene (A) Linux (O)
· Hardcore Processing Website huge website with auto-generated HTML code from L ^A T _E X using in-house software www.hardcoreprocessing.com	Hardcore Processing www.hardcoreprocessing.com	1998-2012	???	HTML, L ^A T _E X (L) Standard ML (P) ML Server Pages, PHP (P) Linux, Windows (O)

Project	Client	Dates	Duration	Technologies
<ul style="list-style-type: none"> · W3C's Document Object Model (DOM) implemented in C++ and can be used with or without CORBA www.hardcoreprocessing.com/pro/domimplementation/ 	Berlin (Open Source) www.berlin-consortium.org	1998	1 month <small>1 day=7.5 hrs</small>	C, C++, OMG IDL (P) egcs (gcc), omniORB (T) Linux, CORBA (O)
<ul style="list-style-type: none"> · Warsaw API in Berlin discussion and software/API design www.hardcoreprocessing.com/home/anoq/Programming/Warsaw.html 	Berlin (Open Source) www.berlin-consortium.org	1997-1999	???	C, C++, OMG IDL (P) egcs, gcc, omniORB (T) Linux, CORBA (O)
<ul style="list-style-type: none"> · GNUStep/NSXKit implemented parts of NeXT's OpenStep API for X-Windows www.hardcoreprocessing.com/home/anoq/Programming/GNUStep.html 	GNUStep (Open Source) www.gnustep.org	1997	???	C, Objective-C (P) gcc (T) Linux, X-Windows (O)
<ul style="list-style-type: none"> · GNUStep NSAttributedString implemented classes of NeXT's OpenStep API www.hardcoreprocessing.com/home/anoq/Programming/GNUStep.html 	GNUStep (Open Source) www.gnustep.org	1997	???	C, Objective-C (P) gcc (T) Linux (O)

Project	Client	Dates	Duration	Technologies
· (Misc. During Employment) interactive CD-ROM programming, game programming	Visionik (I was employed) www.visionik.dk	1997	4.5 months <small>1 day=7.5 hrs</small>	Delphi Pascal (P) Delphi, Authorware (T) Director (T) Windows (O)
· Up-To-Date worked on service system for Danish optic shops. Mostly worked on the (fairly complex) part for ordering glass	Sandlykke & Leifsgård (I was employed) www.targit.dk	1996	1 year	Delphi Pascal (P) Delphi (T) Btrieve, InterBase (T) ODBC (A) SQL (L) Windows (O)
· TankMax worked on economy system for gas stations	Sandlykke & Leifsgård (I was employed) www.targit.dk	1995	1 month	Turbo Pascal (P, T) Btrieve (T) DOS (O)
· ELFOs Meldesystem computer system for registering companies performing work on electrical house installations and check that the Danish laws for 'licitation' are respected	Sandlykke & Leifsgård (I was employed) www.targit.dk	1994-1995	1 year and 4 months	Delphi Pascal (P) C, JAM Prog. Lang (P) Delphi, JAM (T) Btrieve, InterBase (T) ODBC (A) SQL (L) Windows (O)
· Crossplatform GUI Toolkit (unreleased) written in C / C++ / Objective-C www.hardcoreprocessing.com/ home/anoq/Programming/GUIDevTool.html	(Private)	1995-1997	???	C, C++, Objective-C (P) Lattice C / SAS C (Amiga) (T) gcc (Amiga / x86 PC) (T) AmigaOS, NetBSD (Amiga) (O) Linux (x86 PC) (O)
· Amiga Games programming for 1 whole and 2 halve games (unreleased) www.hardcoreprocessing.com/ home/anoq/Programming/AmigaGames.html	(Private)	1990-1994	???	C (P) Lattice C (Amiga) (T) AmigaOS (O)

My M.Sc. in Computer Science (2004-2010)

Key for "Institution":	
DIKU:	Computer Science Department at the University of Copenhagen, Denmark
ITU:	IT-University of Copenhagen, Denmark

Key for "Course Material":	
B:	Book
N:	Special course Notes
RA:	Research Articles

M.Sc. Projects in Computer Science (See Project List for Project Details and Time-Usage)

Course	Institution	Dates	ECTS	Result	Downloadable Report
Typed Interactive Memory Management (Master's Thesis)	DIKU	2010	30.0	Part of CeXL Compiler	Not Yet
Advanced Compiler Middle and Back-Ends	DIKU	2009-2010	20.0	Part of CeXL Compiler	Not Yet
Ánoq SML Basis Library Version 0.8.9 (preliminary number)	DIKU	2010	7.5	Part of Ánoq SML Basis Library www.hardcoreprocessing.com/pro/anoqsmlbasis/	Not Latest
Ksi-Calculus Records	DIKU	2010	15.0	Part of Design of CeXL	Not Yet
Camera Registration from Image Correspondences	DIKU	2009	7.5	Part of CeX3D Inverse www.cex3d.net/inverse	Yes
Image Correspondences for Camera Registration	DIKU	2009	7.5	Part of CeX3D Inverse www.cex3d.net/inverse	Yes

M.Sc. Courses in Computer Science

Course	Institution	Dates	Duration <small>1 day=7.5 hrs</small>	Course Material	Made My Notes Downloadable
Program Inversion and Reversible Computation	DIKU	2009	2 months	Lecture notes (N) and Misc articles (RA)	No
Medical Image Analysis	DIKU	2009	2 months	Lecture notes (N) and Misc articles (RA)	No
Formal Semantics of Programming Languages	DIKU	2007	2 months	'Formal Semantics of Programming Languages' (B) Misc articles (RA)	No
Program Analysis and Transformation	DIKU	2005	1 week	'Program Analysis and Transformation' (N)	No
Types and Programming Languages	DIKU	2004	2 months	'Types and Programming Languages' (B) Misc articles (RA)	No
Topics in Language Based Security (Ph.D. summer course)	ITU	2001	1 week	Misc articles (RA)	No
Advanced Compiler Construction	DIKU	2000	2 months	'Modern Compiler Implementation in ML' (B) Misc articles (RA)	No

My B.Sc. in Computer Science and Mathematics (1998-2004)

Key for "Institution":	
Ath:	Maths Department at the University of Athens , Greece
DIKU:	Computer Science Department at the University of Copenhagen, Denmark
HCØ:	Maths Department at the University of Copenhagen, Denmark
ØEI:	Eastern Europe Institute at the University of Copenhagen, Denmark

Key for "Course Material":	
B:	Book
N:	Special course Notes
RA:	Research Articles

Key for "Made My Notes Downloadable":	
Tells which courses I wrote publicly available notes for at:	
http://www.hardcoreprocessing.com/articles/maths/summaries/	
http://www.hardcoreprocessing.com/articles/huolang/greek/	

B.Sc. Courses in Mathematics

Course	Institution	Dates	Duration <small>1 day=7.5 hrs</small>	Course Material	Made My Notes Downloadable
Mat 2AL	HCØ	2003-2004	2 months	'Algebra' (B)	Yes
Measure Theory / Mat 3MI	Followed at Ath exam at HCØ	2002-2004	2 months	'Θεωρία Μέτρων' (B)	Yes
Probability I	Ath	2002-2003	2 months	'Μάτ- og integralteori' (B) 'Θεωρία Πιθανοτήτων και Εφαρμογές Ι' (B)	Yes
Mat 3GT	HCØ	2002-2003	2 months	'Topology' (B)	Yes
Mat 2KF	HCØ	2002-2003	2 months	'Kompleks Funktionsteori' (B)	Yes
Mat 3GE	HCØ	2002	2 months	'Elemental Differential Geometry' (B)	Yes
Mat 2AN	HCØ	2001-2002	2 months	'Metriske Rum' (B) 'Hilbert Rum' (B)	Yes
Mat Y	HCØ	2001	1 month	'Introduktion til abstrakt matematik' (B)	A few
Mat 1GB	HCØ	1999	2 months	'Linear Algebra' (B)	A few
Mat 1GA	HCØ	1998	2 months	'Linear Algebra' (B)	A few
Mat XX	HCØ	1998	2 months	'Aspects of Combinatorics' (B)	No

Additional B.Sc. Course in Modern Greek Grammar

Course	Institution	Dates	Duration <small>1 day=7.5 hrs</small>	Course Material	Made My Notes Downloadable
Grammatik	ØEI	2004	1.5 months	'Lærebog i græsk for universitetsstuderende' (B) 'Lille kompendium i græsk grammatik' (B)	Yes

B.Sc. Courses in Computer Science

Course	Institution	Dates	Duration <small>1 day=7.5 hrs</small>	Course Material	Made My Notes Downloadable
Bachelor's Thesis 'Definition of CeXL' (see Design of CeXL in project list) <small>www.cex3d.net/cex1/</small>	DIKU	2003	(counted in project list)	'Definition of Standard ML' (B) Loads of other books and articles (B, RA) (see thesis litterature list)	Thesis
Dat 1F	DIKU	2002-2003	2 months	'Operating System Concepts' (B) 'Computer Networking' (B) 'Multiprogramming' (N) 'Programminger på Digital Alpha-arkitekturen' (N)	No
Dat 2A	DIKU	2001	2 months	'Introduction to Algorithms' (B) 'Branch & Bound Algorithms & Generelle Optimeringsheuristikker' (N)	No
Dat 1E	DIKU	1999	2 months	'Computer Organization & Design' (B) 'Arkitekturdelen' (N) 'SimSys' (N) 'Oversætterdelen' (N) 'Basics of Compiler Design' (N)	No
Dat 2V Grafik	DIKU	1999	2 months	'Computer Graphics Principles and Practice' (B)	No
Dat 2V Programmeringssprog	DIKU	1999	2 months	Lecture notes on operational semantics (N)	No
Dat 0	DIKU	1998-1999	4 months	'ML for the Working Programmer' (B) 'Introduction to ML' (B) 'Data Structures & Problem Solving Using Java' (B) 'UML Distilled' (B) 'Funktioner og simple datastrukturer' (N) 'Videregående algoritmer, datastrukturer og typer' (N)	No

Basic Education and Misc Courses

Education	Institution	Dates	Duration <small>1 day=7.5 hrs</small>	Education Material
Modern Greek for ERASMUS students	University of Athens Greece	2002-2003	4 months (twice a week for 1 year)	'Ελληνικά για ERASMUS'
Modern Greek evening course	Københavns Kommunes Aftenskole	2000-2001	2 weeks (once a week for 1 year)	'Ελληνικά Τώρα 1 + 1'
High School (mathematical line with high level maths and high level music)	Dronninglund Gymnasium	1991-1994	3 years	
Elementary School (up till 9th grade)	Dybvad Skole	1981-1991	10 years	

Conferences Education (Ph.D.-level) (Updated on 2012-06-03)

Key for "Course Material":	
B:	Book
RA:	Research Articles
CD:	CD-ROM, DVD-ROM or USB

Conference Paper Sessions (Ph.D.-level Presentations of Latest Research)

Conference / Symposium	Dates	Duration	Conference Material
		1 day=7.5 hrs	
CVPR www.pamitc.org/cvpr13/	2013	3 days	(CD)
Visionday www.visionday.dk	2013	1 day	
Visionday www.visionday.dk	2012	1 day	
EuroGraphics www.eg.org	2012	3.5 days	'Computer Graphics Forum Volume 31 Number 2' (B, RA)
ICCV www.iccv2011.org	2011	5 days	(CD)
SIGGRAPH www.siggraph.org/s2011/	2011	4 days	'acm Transactions on Graphics August 2011, Vol 30, Nr 4' (B, RA)
CVPR www.cvpr2011.org	2011	3 days	(CD)
Visionday www.visionday.dk	2011	3 days	
EuroGraphics www.eg.org	2011	3.5 days	'Computer Graphics Forum Volume 30 Number 2' (B, RA)
VISAPP www.eg.org	2011	3 days	(CD)
SIGGRAPH www.siggraph.org/s2010/	2010	4 days	'acm Transactions on Graphics August 2010, Vol 29, Nr 4' (B, RA)
Visionday www.visionday.dk	2010	3 days	
EuroGraphics www.eg.org	2010	3.5 days	'Computer Graphics Forum Volume 29 Number 2' (B, RA)
SIGGRAPH www.siggraph.org/s2009/	2009	4 days	'acm Transactions on Graphics August 2009, Vol 28, Nr 3' (B, RA)
Visionday www.visionday.dk	2009	3 days	Online slides
EuroGraphics www.eg.org	2009	3 days	'Computer Graphics Forum Volume 28 Number 2' (B, RA)
SIGGRAPH www.siggraph.org/s2008/	2008	4 days	'acm Transactions on Graphics August 2008, Vol 27, Nr 3' (B, RA)
Volume and Point-Based Graphics Symposium on Geometry Processing	2008	1 day 3 days	'Volume and Point-Based Graphics 2008' (B, RA)
EuroGraphics www.eg.org	2008	3 days	'Computer Graphics Forum Volume 27 Number 2' (B, RA)
Parallel Graphics and Visualization	2008	2 days	
EuroGraphics www.eg.org	2007	3 days	'Computer Graphics Forum Volume 26 Number 3' (B, RA)
International Symposium on Volume Graphics	2007	1.5 days	'Volume Graphics 2007' (B, RA)
Symposium on Point-Based Graphics (I missed 1st day!)	2007	0.5 days	'Symposium on Point-Based Graphics 2007' (B, RA)
SIGGRAPH www.siggraph.org/s2007/	2007	4 days	'acm Transactions on Graphics July 2007, Vol 26, Nr 3' (B, RA)
SIGGRAPH www.siggraph.org/s2006/	2006	4 days	'acm Transactions on Graphics July 2006, Vol 25, Nr 3' (B, RA)
SIGGRAPH www.siggraph.org/s2005/	2005	4 days	'acm Transactions on Graphics July 2005, Vol 24, Nr 3' (B, RA)
SIGGRAPH www.siggraph.org/s2004/	2004	4 days	'acm Transactions on Graphics Aug. 2004, Vol 23, Nr 3' (B, RA)
SIGGRAPH www.siggraph.org/s2001/	2001	3 days	'SIGGRAPH 2001 Conference Proceedings' (B, RA)
SIGGRAPH www.siggraph.org/s2000/	2000	3 days	'SIGGRAPH 2000 Conference Proceedings' (B, RA)
SIGGRAPH www.siggraph.org/s99/	1999	3 days	'SIGGRAPH 1999 Conference Proceedings' (B, RA)

Additional Conference Courses (Mostly Ph.D.-level) (Last Updated 2009)

Course	Conference	Dates	Duration	Course Material
GPU-Based Volume Ray-Casting with Advanced Illumination (Tutorial T4)	EuroGraphics www.eg.org	2009	1 day	
Interactive Shape Modelling and Deformation (Tutorial T3)	EuroGraphics www.eg.org	2009	0.5 day	
Mesh Parameterization: Theory and Practice (course 2)	SIGGRAPH www.siggraph.org/s2007/	2007	1 day	'Mesh Parameterization Methods and Their Applications' (B)
Digital Modeling of the Appearance of Materials (course 12)	SIGGRAPH www.siggraph.org/s2006/	2006	3 hours	'SIGGRAPH 2006 Full Conference DVD-ROM' (CD)
Discrete Differential Geometry: An Applied Introduction (course 14)	SIGGRAPH www.siggraph.org/s2005/	2005	1 day	'SIGGRAPH 2005 Full Conference DVD-ROM' (CD)
Discrete Differential Geometry: An Applied Introduction (course 14)	SIGGRAPH www.siggraph.org/s2005/	2005	1 day	'SIGGRAPH 2005 Full Conference DVD-ROM' (CD)
Point-Based Computer Graphics (course 6)	SIGGRAPH www.siggraph.org/s2004/	2004	1 day	'SIGGRAPH 2004 Full Conference DVD-ROM' (CD)
How to Give a Great SIGGRAPH Talk (course 41)	SIGGRAPH www.siggraph.org/s2001/	2001	3 hours	'How to Give a Great SIGGRAPH Talk' (B, CD)
Aquisition and Visualization of Surface Light Fields (course 46) (only first half)	SIGGRAPH www.siggraph.org/s2001/	2001	3 hours	'Aquisition and Visualization of Surface Light Fields' (B, CD)
State of the Art in Monte Carlo Ray Tracing for Realistic Image Synthesis (course 29)	SIGGRAPH www.siggraph.org/s2001/	2001	1 day	'State of the Art in Monte Carlo Ray Tracing for Realistic Image Synthesis' (B, CD)
Advanced Global Illumination (course 20)	SIGGRAPH www.siggraph.org/s2001/	2001	3 hours	'Advanced Global Illumination' (B, CD)
Obtaining 3D Models with a Hand-Held Camera (course 2)	SIGGRAPH www.siggraph.org/s2001/	2001	3 hours	'Obtaining 3D Models with a Hand-Held Camera' (B, CD)
Advanced Issues in Level of Detail (course 41)	SIGGRAPH www.siggraph.org/s2000/	2000	1 day	'Advanced Issues in Level of Detail' (B, CD)
Approaches for Procedural Shading on Graphics Hardware (course 27)	SIGGRAPH www.siggraph.org/s2000/	2000	1 day	'Approaches for Procedural Shading on Graphics Hardware' (B, CD)
A Practical Guide to Global Illumination using Photon Maps (course 8)	SIGGRAPH www.siggraph.org/s2000/	2000	3 hours	'A Practical Guide to Global Illumination using Photon Maps' (B, CD)
Developing Efficient Graphics Software (course 6) (only first half)	SIGGRAPH www.siggraph.org/s2000/	2000	3 hours	'Developing Efficient Graphics Software' (B, CD)
Subdivision for Modelling and Animation (course 37)	SIGGRAPH www.siggraph.org/s99/	1999	1 day	'Subdivision for Modelling and Animation' (B, CD)
Advanced RenderMan: Beyond the Companion (course 25)	SIGGRAPH www.siggraph.org/s99/	1999	1 day	'Advanced RenderMan: Beyond the Companion' (B, CD)
From Fourier Analysis to Wavelets (course 5)	SIGGRAPH www.siggraph.org/s99/	1999	1 day	'From Fourier Analysis to Wavelets' (B, CD)

Other Education (Books, Research Articles etc.)

Mostly covers things I learned myself. There are *other ways* to learn than from schools, universities and conferences.

Key for "Material":	
B:	Book
S:	Specification
RA:	Research Articles

Topic	Material
Semantics of programming languages	'Types and Programming Languages' (B) 'The Formal Semantics of Programming Languages' (B) 'Programming Languages: Concepts and Constructs' (B) 'The Definition of Standard ML' (B, S) <i>Research articles</i> (RA)
Compiler technology	'Modern Compiler Implementation in ML' (B) 'Compilers, Principles, Techniques & Tools' (B) 'Advanced Compiler Design Implementation' (B) 'The Implementation of Functional Programming Languages' (B) 'Partial Evaluation and Automatic Program Generation' (B) <i>Research articles</i> (RA)
Programming	<i>Material about specific languages and APIs (see my skill list)</i>
RenderMan	'The RenderMan Companion' (B) 'Advanced RenderMan: Creating CGI for motion pictures' (B) 'The RenderMan Interface Specification' (S)
3D Computer Graphics	<i>The RenderMan material listed above</i> 'Principles of Digital Image Synthesis' (B) 'Advanced Animation and Rendering Techniques' (B) 'Computer Graphics: Principles and Practice' (B) '3D Computer Graphics' (B) 'Advanced Global Illumination' (B) 'Realistic Image Synthesis Using Photon Mapping' (B) 'Radiosity and Global Illumination' (B) 'Point-Based Graphics' (B) 'Level Set Methods and Dynamic Implicit Surfaces' (B) 'Introduction to Implicit Surfaces' (B) 'Real-Time Rendering' (B) 'Real-Time Volume Rendering' (B) '3D Game Engine Design' (B) 'Graphics Gems I, II, III, IV' (B) 'High Dynamic Range Imaging' (B) 'Texturing and Modelling' (B) 'The Art and Science of Digital Compositing' (B) 'Building a 3D game engine in C++' (B) <i>Many SIGGRAPH Course Notes Books</i> (B) <i>Many research articles (e.g. SIGGRAPH, EuroGraphics)</i> (RA)
Computer Vision	'Multiple View Geometry' (B) 'An Introduction to Computer Vision Techniques and Algorithms' (B) 'Computer Vision Algorithms and Applications' (B) '3D Computer Vision' (B) 'Image Alignment and Stitching: A Tutorial' (B) <i>Many research articles (e.g. CVPR, ICCV, ECCV)</i> (RA)
Misc	'The CORBA specifications' (S) 'Developing Business Applications with OpenStep' (B) 'Artificial Intelligence Agents in Virtual Reality Worlds' (B)