

Curriculum vitæ

Name: Johan Karlsson

Date: January 9, 2008

Academic education

Note: One week of successful full-time study is equivalent to 1 Swedish credit point (corresponding to 1,5 ECTS). One full academic year usually gives 40 Swedish credit points (60 ECTS).

Master's degree in Computing Science (Filosofie magisterexamen i datavetenskap), 160 Swedish points (+ 25 points).(Homologado por el Ministerio de Educación y Ciencias)

Department: Department of Computing Science, Umeå University, Sweden

Date: 05/10/1998

Natural sciences programme (Naturvetenskaplig linje). Three years fulltime studies.

School: Anderstorpskolan, Skellefteå Sweden

Date: 11/06/1993

Postgraduate courses (from the doctoral program)

- USB Smart Card Summer School, University of Malaga (Spain), July 9-10, 2003.
- "Space, science and technology", Umeå University (Kiruna, Sweden) during August 2004.
- Postgraduate courses at Umeå University (Sweden), Department of Computing Science (total: 66 points = 99 ECTS):
 - Artificial intelligence, 4.0 points.
 - Computational intelligence, 4.0 points.
 - Computer graphics and visualization, 4.0 points.
 - Distributed systems, 5.0 points.
 - Medical informatics, 5.0 points.
 - Medical informatics II, 5.0 points.
 - Medical databases, 5.0 points.
 - Social networks and communication, 4.0 points.
 - Human-Computer interaction II, 5.0 points.
 - Program specification and program construction, 5.0 points.
 - Fundamentals of data warehouse, 5.0 points.
 - Terminologies and guideline languages, 2.0 points.
 - Pharmacology information systems, 5.0 points.
 - Medical image processing, 3.0 points.

- Program design and modern development techniques with Java, 5.0 points.

Languages (B = Basic, G = Good, E = Excellent, M = Mother tongue)

<u>LANGUAGE</u>	<u>VERBAL SKILLS</u>	<u>READING</u>	<u>WRITING</u>
English	E	E	E
Swedish	M	M	M
Spanish	B	B	B
German	B	G	B

Computer skills

- Software development methodologies - especially object oriented design and development.
- Programming languages: Java (development, teaching), C/C++ (development, teaching), Pascal (course), Lisp (course), PHP (development).
- Database administration: IBM DB/2 (electronic patient record), MySQL (development).
- Other: BioMOBY, SQL, HTML, UML, J2EE, XML, XSL, WAP, AWT, Swing, SWT, JNI (java native interface), JBoss, Tomcat.

Teaching experience

DEPARTMENT: Computing Science, Umeå University, Sweden.

NAME: Programming in Unix environment (Programmering i Unix-miljö) (5 Swedish points).

ACADEMIC YEAR(S): 98-99.

LEVEL: A-level course CONTENTS: Computer usage and program development in UNIX-environment. Programming in C. Programming methodology and abstract data types. Low level programming and dynamic memory allocation.

COURSE LITERATURE: Barret M. & Wagner C., *C and UNIX: Tools for Software Design*, ISBN: 0471309273.

AREA: Computing Science.

ROLE: Lecturer and practical exercises supervisor.

NAME: Computer Science for Technical Chemistry (Datavetenskap för teknisk kemi) (5 Swedish points).

ACADEMIC YEAR(S): 99-00.

LEVEL: A-level course CONTENTS: Basic computer usage and information on compilers, editors and other programming tools. Basic computer architecture and functionality. Programming as a problem solving technique and program specifications. Programming methodology and dynamic memory allocation. Debugging techniques and software documentation.

COURSE LITERATURE: Kelley A. & Pohl I., *A Book on C - Programming in C*, ISBN: 0201183994.

AREA: Computing Science.

ROLE: Lecturer, practical exercises supervisor and examiner.

NAME: Medical informatics (Medicinsk informatik) (5 Swedish points).

ACADEMIC YEAR(S): 00-01, 01-02, 02-03.

LEVEL: C-level course CONTENTS: Electronic patient journals. Patient oriented information. Terminology systems and concepts. Analysis and handling of medical information. Tele-medicine. Knowledge-based systems. Workflow and medical guidelines. Information systems in health care.

COURSE LITERATURE: Van Bommel J., Musen M., *Handbook of Medical Informatics*, ISBN: 3540633510.

AREA: Computing Science.

ROLE: Lecturer, practical exercises supervisor and examiner.

NAME: Programming methodology (Programmeringsmetodik) (5 Swedish points).

ACADEMIC YEAR(S): 03-04, 04-05.

LEVEL: A-level course CONTENTS: Abstract data types, algorithms and complexity. Programming methodology. Program specification. Debugging and testing. Programming in an object-oriented language (Java).

COURSE LITERATURE: Barnes D. & Kolling M., *Objects First with Java - A Practical Introduction using BlueJ*, ISBN: 0131249339.

AREA: Computing Science.

ROLE: Lecturer, practical exercises supervisor and examiner.

NAME: Master thesis (Examensarbete) (20 Swedish points).

ACADEMIC YEAR(S): 99-00, 00-01, 01-02, 02-03, 03-04, 04-05.

LEVEL: D-level course CONTENTS: Supervision of Master thesis projects.

AREA: Computing Science.

ROLE: Supervisor and examiner.

NAME: Lectures on BioMOBY architecture at the Swiss Institute of Bioinformatics (SIB). Invited. Two days from 26th-27th of June, 2006.

CONTENTS: Overview of BioMOBY, extensions from INB (error handling, asynchronous communication). Discussions with participants about using BioMOBY for MyHits.

AREA: Computing Science.

ROLE: Lecturer.

NAME: Lecture on Web services during EMBRACE course "WORKFLOWS OVER GRID BASED WEB SERVICES: GENERAL FRAMEWORK AND A PRACTICAL CASE FOR STRUCTURAL BIOLOGY", date 20th of February 2007.

CONTENTS: Overview of web-services, SOAP messaging, WSDL basics and practical exercises using Apache Axis and Tomcat.

AREA: Computing Science.

ROLE: Lecturer and practical exercises supervisor.

Research experience

Publications:

1. J. Karlsson, P. Eklund, C.-G. Hallgren, J.-G. Sjödin, *Data warehousing as a basis for web-based documentation of data mining and analysis*, Proc. Medical Informatics Europe '99 (Eds. P. Kokol, B. Zupan, J. Stare, M. Premik, R. Engelbrecht), IOS Press, 1999, pp. 423-427.

2. J. Karlsson, P. Eklund, *Data mining and structuring of executable data analysis reports: Guideline development in a narrow sense*, Proc. Medical Informatics Europe '00: Medical Infobahn for Europe (Eds. A. Hasman, B. Blobel, J. Dudeck, R. Engelbrecht, G. Gell, H.-U. Prokosch), IOS Press, 2000, pp. 790-794.
3. J. Karlsson and P. Eklund, *Workflow Design as a Basis for Component Interaction*, Proc. Medinfo 2001, IOS Press, 2001, pp. 1158-1160.
4. P. Eklund, S. Eriksson, J. Karlsson, H. Lindgren and A. Näslund, *Software development and maintenance strategies for guideline implementation*, Proc. EUNITE-Workshop "Intelligent Systems in Patient Care" (Ed. K.-P. Adlassnig), Austrian Computer Society, 2001, 26-34.
5. J. Karlsson, P. Eklund, *A one-step approach to data retrieval, analysis and documentation*, Proc. Medical Informatics Europe '02: Health Data in the Information Society (Eds. G. Surján, R. Engelbrecht, P. McNair), IOS Press, 2002, pp. 320-324.
6. J. Karlsson, P. Eklund, *Simulations of workflows in radiation therapy*, Poster, Medical Informatics Europe '03: The new navigators : from professionals to patients, 2003.
7. P. Eklund, J. Karlsson, A. Näslund, *Mobile pharmacology*, UMINF-04.17, Dept. of Computing Science, Umeå University, 2004.
8. P. Eklund, P. Hajek, J. Karlsson, J. Rauch, M. Simunek, *On proposing and predicating guidelines and decision limits*, UMINF-05.04, Dept. of Computing Science, Umeå University, 2005.
9. J. Karlsson, *Interface for Accessing Pharmacological Information*, UMINF-05.06, Dept. of Computing Science, Umeå University, 2005.
10. P. Eklund, J. Karlsson, J. Rauch, M. Simunek, *Computational coronary artery by-pass grafting*, Proc. Sixth International Conference on Computational Intelligence and Multimedia Applications, pp. 138-144, 2005.
11. P. Eklund, J. Karlsson, J. Rauch, M. Simunek, *On the Logic of Medical Decision Support*, Theory and Applications of Relational Structures as Knowledge Instruments II, Lecture Notes Computer Science (LNCS), Volume 4342, pp. 50-59., 2006.
12. P. Eklund, J. Karlsson, A. Näslund, *Mobile Pharmacology*, Proc. International Conference on Hybrid Information Technology (ICHIT), SERC and SERSC, 2006.
13. P. Eklund, J. Karlsson, A. Näslund, *Mobile Pharmacology*, M.S. Szczuka et al. (Eds.): ICHIT 2006, Lecture Notes Computer Science (LNCS), Volume 4413, pp. 522-533, 2007.

14. P. Eklund, M.A. Galán, and J. Karlsson, *Rough Monadic Interpretations of Pharmacologic Information*, Proceedings of the 15th International Workshops on Conceptual Structures, ICCS 2007, pp. 108-113. Sheffield, UK.
15. R. Fernández-Santa-Cruz, J. Karlsson, J. F. Aldana-Montes, and O. Trelles, *Workflow execution in the INB platform*, Poster, VII Spanish Bioinformatics Symposium (Zaragoza 20-22 November 2006)
16. S. Ramírez, J. Karlsson, J. M. Rodríguez, R. Royo and O. Trelles, *Mirroring BioMOBY services*, Poster, VII Spanish Bioinformatics Symposium (Zaragoza 20-22 November 2006)
17. M. Wilkinson et al., *Interoperability with Moby 1.0 - It's Better than Sharing Your Tooth-brush!*, Briefings in Bioinformatics, to appear, 2008.

Research visits

1. DEPARTMENT: Department of Informatics. University of Turku.
PLACE: Turku (Finland).
PERIOD: 11/9 to 21/9 2003.
2. DEPARTMENT: Department of Applied Mathematics. University of Malaga.
PLACE: Malaga (Spain).
PERIOD: June 2003.
3. DEPARTMENT: Swiss Institute of Bioinformatics (SIB).
PLACE: Lausanne (Switzerland).
PERIOD: 26th-27th of June, 2006.

Earlier external financing

- Research grant at Department of Computing Science, Umeå University, Sweden.
Source: KK-stiftelsen. During 01-01-1999–31-12-2000.

Collaborations

DEPARTMENT: Computing Science

UNIVERSITY: Åbo Academy

COUNTRY: Finland

DEPARTMENT: EuroMISE

UNIVERSITY: University of Economics, Prague

COUNTRY: Czech Republic

DEPARTMENT: Urology and Andrology

UNIVERSITY: Umeå University

COUNTRY: Sweden

Research groups

TITLE: Medical informatics.

DEPARTMENT: Computing Science, Umeå University, Sweden.

Seminars given (except for conference presentations)

TITLE: Computer support for health care.
PLACE: Department of Computing Science.
UNIVERSITY: Umeå University.
COUNTRY: Sweden. YEAR: 2001

TITLE: Medical Informatics.
PLACE: Department of Applied Mathematics.
UNIVERSITY: Malaga University.
COUNTRY: Spain. YEAR: 2003

TITLE: Medical Informatics.
PLACE: Department of Computing Science.
UNIVERSITY: Umeå University.
COUNTRY: Sweden. YEAR: 2004

TITLE: Medical Informatics.
PLACE: Medical Technology and Informatics.
UNIVERSITY: Umeå University hospital.
COUNTRY: Sweden. YEAR: 2004

Work experience

Current employment:

DATES (FROM-TO): 1/2008–on-going

NAME AND ADDRESS OF EMPLOYER: Department of Computer Architecture, Malaga University, Malaga, Spain.

TYPE OF BUSINESS OR SECTOR: Project

OCCUPATION OR POSITION HELD: Internal technical coordinator of the University of Malaga participation in the European project ACGT (Advanced Clinico-Genomic Trials on Cancer)(<http://www.eu-acgt.org/>)

MAIN ACTIVITIES AND RESPONSIBILITIES: Planning and administration of technical aspects in the project. Management of KDD service development for gene expression data as web-services and used in workflows.

Earlier employments:

DATES (FROM-TO): 10/2005–12/2007

NAME AND ADDRESS OF EMPLOYER: Department of Computer Architecture, Malaga University, Malaga, Spain.

TYPE OF BUSINESS OR SECTOR: Project

OCCUPATION OR POSITION HELD: Internal technical coordinator of Malaga (GNV5) node of Spanish National Institute of Bioinformatics (INB).

MAIN ACTIVITIES AND RESPONSIBILITIES: Responsible for the development of the MOWServ client and external communication with BioMOBY community. Coordination and contribution to documentation of the client and elaborate and development of proposals for extending BioMOBY.

DATES (FROM-TO): 4/2005–10/2005

NAME AND ADDRESS OF EMPLOYER: Department of Computing Science, Umeå University, SE-90187 Umeå, Sweden.

TYPE OF BUSINESS OR SECTOR: Research and teaching.

OCCUPATION OR POSITION HELD: Research assistant.

MAIN ACTIVITIES AND RESPONSIBILITIES: Research 75% and teaching 25%. Involvement in DITRA (www.ditra.se) EU-project. Telecommunications/teleconference and software development.

DATES (FROM-TO): 1/2005–3/2005

NAME AND ADDRESS OF EMPLOYER: Department of Computing Science, Umeå University, SE-90187 Umeå, Sweden.

TYPE OF BUSINESS OR SECTOR: Research and teaching.

OCCUPATION OR POSITION HELD: Research assistant.

MAIN ACTIVITIES AND RESPONSIBILITIES: Research 50%.

DATES (FROM-TO): 1/2004–12/2004

NAME AND ADDRESS OF EMPLOYER: Department of Computing Science, Umeå University, SE-90187 Umeå, Sweden.

TYPE OF BUSINESS OR SECTOR: Research and teaching.

OCCUPATION OR POSITION HELD: Research assistant.

MAIN ACTIVITIES AND RESPONSIBILITIES: Research 50% and Teaching 50%.

DATES (FROM-TO): 1/1999–12/2003

NAME AND ADDRESS OF EMPLOYER: Department of Computing Science, Umeå University, SE-90187 Umeå, Sweden.

TYPE OF BUSINESS OR SECTOR: Research and teaching.

OCCUPATION OR POSITION HELD: Doktorand (employed PhD student).

MAIN ACTIVITIES AND RESPONSIBILITIES: Research 80% and Teaching 20%.

DATES (FROM-TO): 2000

NAME AND ADDRESS OF EMPLOYER: Spreadskill AB, Umestan företagspark SE-903 47 Umeå, Sweden.

TYPE OF BUSINESS OR SECTOR: Web-based courses.

OCCUPATION OR POSITION HELD: Test evaluator.

MAIN ACTIVITIES AND RESPONSIBILITIES: Evaluated one test in object-oriented programming (C++).

DATES (FROM-TO): 10/1998–12/1998

NAME AND ADDRESS OF EMPLOYER: Department of Computing Science, Umeå University, SE-90187 Umeå, Sweden.

TYPE OF BUSINESS OR SECTOR: Software development.

OCCUPATION OR POSITION HELD: Research assistant.

MAIN ACTIVITIES AND RESPONSIBILITIES: Development of software for decision support.

DATES (FROM-TO): 06/1998–08/1998

NAME AND ADDRESS OF EMPLOYER: Medical Technology and Informatics, University hospital of Umeå, SE-901 85, Umeå, Sweden.

TYPE OF BUSINESS OR SECTOR: Health care.

OCCUPATION OR POSITION HELD: Web pages designer.

MAIN ACTIVITIES AND RESPONSIBILITIES: Summer job, development of web pages for project. Maintenance of decision support software.

Other merits

Conference attendance

1. NAME: Toward An Electronic Health Record Europe. PLACE: London, Great Britain.
YEAR: 1998
2. NAME: Joint European Conference on Artificial Intelligence in Medicine and Medical Decision Making.
PLACE: Aalborg, Denmark. YEAR: 1999
3. NAME: Medical Informatics Europe '99. PLACE: Ljubljana, Slovenia. YEAR: 1999
4. NAME: Medical Informatics Europe '00. PLACE: Hannover, Germany. YEAR: 2000
5. NAME: Medinfo 2001. PLACE: London. YEAR: 2001
6. NAME: Medical Informatics Europe '02. PLACE: Budapest, Hungary. YEAR: 2002

7. NAME: Medical Informatics Europe '03. PLACE: St. Malo, France. YEAR: 2003
8. NAME: European Conference on Computational Biology (ECCB05). PLACE: Madrid, Spain. YEAR: 2005
9. NAME: VII Spanish Bioinformatics Symposium, November 22nd-24th, 2006 PLACE: Zaragoza, Spain. YEAR: 2006
10. NAME: Workshop on Collaborative Bioinformatics, EMBnet & RIB, Torremolinos 11th-14th June 2007. PLACE: Malaga, Spain. YEAR: 2007
11. NAME: ACGT Kick-off meeting, 27 February- 1 March 2006. PLACE: Nice, France. YEAR: 2006
12. NAME: ACGT WP3-4-5 meeting, 16th-17th May. PLACE: Eindhoven, Netherlands. YEAR: 2006
13. NAME: ACGT Plenary meeting, Torremolinos, 23rd-26th of January, 2007. PLACE: Malaga, Spain. YEAR: 2007
14. NAME: International Conference on Conceptual Structures (ICCS) PLACE: Sheffield, United Kingdom. YEAR: 2007

Software publication

- Software API for pharmacological database (SpriTerm).

Language courses

- Spanish Intensive Course (50 hours). University of Málaga 2005.
- Spanska termin 1-3 (Spanish three terms), Umeå University (Sweden) (Folkuniversitetet).
- Baskurs i Spanska (Basic course in Spanish), 10 Swedish points, Department of Modern Languages, Umeå University (Sweden).

Other

- Military service from 06/1993 to 04/1994. Rank: Furir (Corporal), group leader.