Faculty engaged in the graduate study programme

ADIT: Database and Information Techniques

Patrick Lambrix, Ph. D., Linköping 1996. Associate professor (docent, universitetslektor).

Bioinformatics and intelligent information systems: knowledge representation, organization and management of information, information retrieval, ontologies, integration of biological databases.

Nahid Shahmehri, Ph. D., Linköping 1991. Professor of computer science. Group leader, IISLAB and EDSLAB. Head of the Division for Database and Information Techniques. Previous affiliation: Carlstedt Elektronik AB.

Engineering information systems and applications, information security, peer-to-peer computing, Internet and mobile services, information retrieval and information extraction.

Lena Strömbäck, Ph. D., Linköping 1997. Assistant professor (universitetslektor). Previous affiliations: Assistant professor, NLPLAB, Linköping University, Coordinator of research activities at Nokia Home Communications.

Multimedia databases, information extraction, functionalities for intelligent homes.


Intelligent Informations Systems: information retrieval and filtering, electronic mail and the semantic web, work-flow and task management.
AIICS: Artificial Intelligence and Integrated Computer Systems

Marcus Bjäreland, Ph. D., Linköping 2001. Assistant professor (vik. universitetslektor), computer science.
Artificial Intelligence, Knowledge Representation, Execution Monitoring, Constraint satisfaction, Reasoning about Action and Change.

Patrick Doherty, Ph. D., Linköping 1991. Professor of computer science, Group leader, KPLAB. Head of the Division for Artificial Intelligence and Integrated Computer Systems.

Programming languages and systems, programming methodology, program manipulation, partial evaluation.

Witold Lukaszewicz, Ph. D., 1979 in Warsaw University. On leave from College of Economics and computer science TWP Olsztyn.
Research interests include reasoning about action, non-monotonic reasoning, planning and knowledge base update.
Erik Sandewall, Ph. D., Uppsala 1969. Professor of computer Science. Group leader, CASL. Director of the WITAS project. Chairman of the Board for the National Graduate School in computer science (CUGS). Director of Linköping University Electronic Press.

Representation of knowledge with logic, reasoning about action and change, cognitive robotics, autonomous agents.
**HCS: Human-Centered Systems**


Syntax, semantics and pragmatics of natural language; dialogue systems, natural language; machine-aided translation, parallel corpora.

**Nils Dahlbäck**, Ph. D., Linköping 1992. Associate professor (*universitetslektor*), cognitive science. Deputy/Dean in the Arts and Science faculty

Natural language processing, especially empirically based computational models of discourse. Individual differences in cognitive styles and abilities, including learning styles, and their relationship to hypermedia navigation and IT-based learning. Cultural differences in social responses to media.


Knowledge-based systems, knowledge acquisition, ontologies, semantic web, medical informatics, software development environments, command-and-control systems, Internet-based applications, and Java programming


System development, requirements engineering, organizational development, quality methods, participatory design, information technology.
Erik Hollnagel, Ph. D., Århus 1981. Professor of Human-Computer Interaction. Several previous affiliations in Denmark, England and Norway.

Cognitive systems engineering, risk and reliability analysis, user modelling and simulations, decision support and expert systems


Expert systems and artificial intelligence applications, database technology, human-computer interaction, intelligent tutoring systems and software engineering.


Qualitative spatial reasoning, geographical information systems, database technology, visual languages.


Artificial intelligence, natural language processing, dialogue systems, especially empirically based computational dialogue models.


Cognitive technology, cognitive modelling, cognitively based agents in adaptive support systems, visual reasoning.

Text-to-speech conversion, speech recognition, speech-to-speech translation, prosody in speech synthesis and recognition.


Human-computer interaction, usability engineering, cognitive ergonomics, user interface design.


Natural language processing, computational support for writing and translation; machine-aided translation, parallel corpora, information extraction.

**Kjell Ohlsson**, Ph. D., Umeå 1982. Professor at the Department of Mechanical Engineering. Part time at the Department of Computer and Information Science, human-computer interaction. Previous affiliations Umeå, Luleå and others.

Human-computer interaction, usability engineering, cognitive ergonomics, decision making, psycho acoustics.


Intelligent tutoring systems, simulation based tutoring systems, student modelling and user modelling, human-computer interaction.
Nancy Reed, Ph. D., University of Minnesota 1995. Assistant professor (universitetslektor), computer science. Previously at University of California, Davis.

Autonomous agents, knowledge-based systems, modelling human expert reasoning, real-time systems and specification languages for agents. Current application areas are agents in dynamic simulation environments and knowledge-based systems in diagnosis.


Geographical Information Systems - GIS. Communication of complex data and linking multi disciplinary models in GIS. Research in environmental programs, programs for medical geography, physical planning and decision support.


Hypermedia, computers and society, human-computer interaction, systems development.

Shumin Zhai, Ph. D., University of Toronto, 1995. Guest Professor, Human-Computer Interaction. Research Staff Member, IBM Almaden Research Center, San Jose, California.

Advanced user interfaces; interaction devices and methods; multi-dimensional, multi-stream, multi-hand, and multi-modal input; human performance modeling and experimentation.
ISM: Information Systems and Management


Information systems architecture, theories on information systems development, inter-organisational business development, qualitative research methods.

**Stefan Cronholm**, Ph. D., Linköping 1998, Assistant professor (universitetslektor), computer science. Co-leader, VITS. Director of undergraduate studies for the Information Systems Analysis Program.

Theories/methods on business process and information systems development, method modelling, qualitative research methods, method tools, usability.


Communicative action theories and methods for evaluation and design concerning inter-organisational networking, business processes, information systems, human-computer interaction, electronic commerce and knowledge management. Method modelling and renewal. Qualitative research approaches.
Anna Moberg, Ph. D., Linköping 1997. Assistant professor, (forskarassistent), economic information systems.

IT and organisational design, e-work, telework, callcentre, non-territorial office, organisational communication, location.


Strategy and management control, environmentally-driven business development, valuation and accounting of intangible assets, production control.


Management issues arising from IT-enabled business change, especially how accounting, control, and pricing could be modified to provide information and incentives appropriate for the new business situation.

Birger Rapp, Econ. Dr., Stockholm 1974, Professor of economic information systems. Group leader, EIS. Head of the Division for Information Systems and Management. Director of the Swedish Research School of Management and Information Technology, M.I.T.. Among many other appointments president of the board of the Swedish Teleworking Association, Distansforum and program director in Management and Economic Information Systems at IMIT.

Accounting, business control, agency theory, IT and organization, production, economics.


Main interests in Computer Simulation in Change Processes, Process Management and Manufacturing Planning and Control.


Health informatics and the organizational and societal economic effects of the development, use and implementation of Information and Communication Technology (ICT). Economic. Human-computer interaction, and development of methods and models for Economic Evaluation of user centered approaches to develop Information Systems.

**Alf Westelius**, Econ. Dr., SSE Stockholm, 1996. Assistant professor (*universitetslektor*), economic information systems, especially electronic commerce and knowledge management. Previous affiliations: The Stockholm School of Economics, the Ministry of Culture.

Knowledge management, project management, electronic commerce, change management and implementation processes.
**SaS: Software and Systems**

**Uwe Assmann.** Dr. rer. nat., Karlsruhe, 1995. Associate professor (*docent, universitetslektor*). Group leader, RISE (Research Center for Integrational Software Engineering) and the Swedish Semantic Web initiative (SWEB). Previous affiliations: Karlsruhe University, INRIA Rocquencourt, GMD. Member of IFIP WG 2.4 System Implementation Techniques.

Software engineering, software composition, aspect oriented development, Semantic Web, graph rewriting, software architecture, program analysis and optimization. Tools: Pike, COMPOST, Optimix, CoSy.

**Wlodzimierz Drabent.** Ph. D., Warsaw 1985. Associate professor (*docent, universitetslektor*), computer science. Associate professor at the Institute of computer science, Polish Academy of Sciences.

Logic programming: proving properties of programs, types, error diagnosis, constraint logic programming, negation; programming languages semantics.

**Petru Eles.** Ph. D., Bucuresti 1993. Professor of embedded computer systems. Previous affiliation: Technical University Timisoara, Romania.

Design of embedded systems, design automation for digital systems, real-time systems, hardware/software co-design, computer architectures, concurrent programming, hardware description languages and languages for system specification.


Computer graphics, virtual reality, physics-based simulation, visualization and animation; modelling and simulation environments.
Distributed systems, object-oriented programming, object-oriented analysis and design, operating systems.

Modelling techniques, parallel simulation, visualization, machine element modelling, e.g. rolling bearings.

Programming environments and languages, design languages and simulation environments, scientific computing, debugging tools, incremental compilation technology, compiler generation, compilers and development tools for parallel hardware.

**Jörgen Hansson**, Ph. D., Linköping University 1999. Assistant professor (*universitetslektor*), Director of CUGS - national graduate school of computer science. Chair of the board of studies for the bachelor’s engineering curriculum at the Linköping Institute of Technology. Previous affiliations: University of Skövde and University of Virginia, Charlottesville.
Real-time systems, database support for embedded and real-time systems, real-time operating systems, distributed systems.
**Peter Jonsson**, Ph. D., Linköping 1996. Associate professor (*docent, universitetslektor*), computer science.

Construction and analysis of algorithms. Complexity theory.

**Christoph Kessler**, Ph. D., Saarbrucken, Germany 1994

Associate professor (*docent, universitetslektor*), for data structures, algorithms, and programming, at PELAB. Director of undergraduate studies for the Software and Systems division (SaS).

Code generation, code optimization, programming parallel computers, design and implementation of parallel programming languages, algorithms and data structures, computational geometry.

**Erik Larsson**, Ph. D., Linköping 2000. Assistant professor (*vik. universitetslektor*), computer systems.

Design and optimization of hardware test of computer systems, computer architecture, operating systems, computer-aided design of electronic systems.

**Mariam Kamkar**, Ph. D., Linköping 1993. Professor of software engineering. Head of the department of computer science.

Software engineering, software testing, program debugging, program analysis, optimization in compilers, programming environments and languages.


Constraint logic programming, formal methods in computer science.

Modelling and formal verification, Dependable systems, Resource allocation and Fault-tolerance in Distributed systems.

**Ulf Nilsson**, Ph. D., Linköping 1992. Associate professor (*docent, universitetslektor*), computer science. Associate head of the department of computer science. Director of graduate studies. Group leader, TCSLAB. Previous affiliations: State University of New York at Stony Brook and École Normale Supérieure de Cachan.

Logic programming and constraint programming; Formal verification; Automated fault diagnosis; Program transformation and abstract interpretation.


Design and test of embedded systems, electronic design automation, design for testability, hardware/software co-design, real-time systems, computer architecture, VLSI.


Industrial software engineering, knowledge management, requirements engineering, software quality, software processes, knowledge engineering, empirical research methods, inspection methods.


Tools, methods and architecture for systems engineering and real-time system design. Applications in automation and embedded systems. Real-time programming and specification languages. Robot programming.
Guest researchers and affiliated faculty engaged in the graduate study programme

Sten F. Andler, Ph. D., Carnegie-Mellon University 1979. Professor of computer science, Högskolan i Skövde, (docent, LiU), distributed systems, real-time systems, operating systems. Previous affiliations: IBM Software Solutions (1992-93) and Almaden Research Center (1979-92), San Jose, CA.

Distributed real-time systems, real-time databases, active real-time databases, distributed databases, real-time operating systems.

Anders Avdie, Ph. D., Linköping 1999. Senior lecturer (universitetslektor), Örebro University.

End User Computing, Local Systems, Knowledge Management.


Planning and temporal reasoning, algorithms and complexity, model-based diagnosis.

David Carr, Ph. D., Maryland 1995. Assistant professor (universitetslektor), human-computer interaction. Previous affiliations Maryland and Luleå.

User interface design, visualization, computer-supported cooperative work and groupware for teamwork.

Intelligent Control, Fuzzy Systems and Control, Autonomous Robotics.

Owen Eriksson, Ph. D., Linköping 2000, Senior Lecturer (universitetslektor), informatics. Co-leader, VITS. Director of undergraduate studies for Informatics at Dalarna University.

Theories/methods on business process and information systems development and evaluation, data base and conceptual modelling, IT and mobility.

Roland Hjerppe, Director of Libraries, Mid Sweden University. Previous Group leader, LIBLAB.

Library science and systems, hypertext and -media, knowledge organization and information retrieval, citation analysis and bibliometrics, personal and everyday life information/document management.

Olof Johansson, Ph. D., Linköping 1996.

Engineering databases, complex product models.


System development models, development of complex systems, organizational learning.

Business processes and information systems. Method engineering qualitative research methods, change analysis, knowledge management.

Witold Litwin, Professor University Paris 9. Guest professor Linköping, Stanford, Berkeley, Santa Clara university.

Distributed scalable data structures (SDDSs), multidatabase systems, storage structures, query languages.


Interaction design, human-computer interaction.


Application packages, business modelling, business process re-engineering (BPR), information management, ISD methods, IS/IT strategies, maintenance management.


Functional programming languages, programming language implementation, functional programming, declarative debugging.

Work and knowledge (medicine and academia); tradition, innovation and technology; hypertext and visual resource development paths.

Andrzej Szalas, Ph. D., Warsaw University 1984. Guest professor. Also a professor in the College of Economics and computer science, Olsztyn, Poland.

Applied logics, knowledge representation, deductive databases.