

# Curriculum Vitae

## Dr. Robert C. Kremer, B.Sc., M.Sc., Ph.D.

### Robert Carl Kremer

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(403) 284-4707 (FAX)



### Research Interests

Visual languages  
Agent based systems  
Object oriented programming  
Software engineering  
Distance education

### Education

1993 to 1997

#### **University of Calgary** **Calgary, Alberta**

*Doctor of Philosophy in Computer Science, Visual Languages.*

Development of a concept mapping "meta-language" for the specification and automatic implementation of a wide variety of formal and informal concept mapping languages. Develops arcs, rather than nodes, as the dominant object type in concept mapping languages. The thesis can be obtained from <http://www.cpsc.ucalgary.ca/~kremer/dissertation/>.

1991 to 1993

#### **University of Calgary** **Calgary, Alberta**

*Master of Science in Computer Science, Groupware Systems.*

Development of a groupware concept mapping system. The system was implemented in C++ under MS Windows 3.1. Subsystems included a object oriented graphics library, abstract references to locations, and a complete hypermedia system. The thesis can be obtained from <ftp://ksi.cpsc.ucalgary.ca/KSI/ps/KremerMSc.ps.Z> or <ftp://ksi.cpsc.ucalgary.ca/KSI/RTF/KremerMSc.RTF.Z>.

1980 to 1989

#### **University of Calgary** **Calgary, Alberta**

*Bachelor of Science in Computer Science, with Distinction.*

Areas of concentration were formal methods, language design, compiler writing, and object oriented programming.

## Teaching

### Undergraduate Courses

W05	Foundations of Software Engineering, CPSC 333 – an inquiry-based introduction to software development problems and to the processes and methods used to address them.
W97, W98, W99, F99, F00, W01, W02, W03	Practical Software Engineering, CPSC 451 – a group project-oriented course covering many aspects of the software development life cycle.
F02, W04	Human and Organizational Aspects of Software Engineering, SENG 411 – a group project-oriented course covering many aspects of the software development life cycle (same as CPSC451)
W02, F04	Software Architectures, SENG 443 – a course covering software architectures, design patterns, component-based software development, reuse methods and techniques, and framework models.
F97	Advanced Information Systems, CPSC 547 – a “hot topics” course on current advancements in industrial information systems.
W99	Artificial Intelligence, CPSC 533 – a survey course dealing with a wide spectrum of topics in AI.

### Graduate Courses

W98, F99, F01, W02, F04	Object Theory, SENG 609.03 – a theory course describing the design space of object-oriented programming language.
W98, W99, F00, W03, W04	Design Patterns, SENG 609.04 – a practical course which gives the students a broad working knowledge of object-oriented design patterns.
F98, F99, F00, F01, F02, W04, F04	Requirements Engineering, SENG 611 – a highly participative practical course making use of many small projects and in-class exercises.
F98, W99, F99, W00, F00, W01, F01	Managing the Software Engineering Research Process, SENG 691 – a course designed to help thesis-based master students through the research process.
F98, W99, F99, W00, F00, W01, F01	Trends in Software Engineering, SENG 693 – a course done mostly by guest lecturers on current developments in software engineering.

### Lectures and Short Courses

Design Patterns – an one- to three-lecture introduction to object-oriented design patterns.

Conceptual Graphs – an eight-lecture course on J. Sowa’s Conceptual Graphs (written with D. Lukose)

STL – a one- to three- lecture introduction to the C++ Standard Template Library.

Java and JavaScript – a one- to two- lecture introduction to the fundamentals of Java and Java-enabled Web browsers.

## Graduate Supervision

### Supervisor of:

Dong Pan, received M.Sc 1998 (Calgary, Software Engineering, Design Patterns)

Quin Wang, received M.Sc 1999 (Calgary, Software Engineering, Corba)

Alan Goodbrand, received M.Sc 2000 (Calgary, Software Engineering, Formal Methods)

Kim Johnson, received M.Sc. 2001 (Calgary, Software Engineering, Open Source Dev.)

Bradley Jones, received M.Sc. 2002 (Calgary, Software Engineering, Social Commitments and the Contract Net)

Roberto Flores-Mendez, received PhD 2002 (Calgary, Computer Science. Modelling Agent Conversations for Action)

Jim Gee, current M.Sc. candidate (Calgary, Software Engineering)  
David Baker, current M.Sc. candidate (Calgary, Software Engineering)  
David Menks, current M.Sc. candidate (Calgary, Software Engineering)  
Guy Davis, current M.Sc. candidate (Calgary, Software Engineering)  
Filip Balas, current M.Sc. candidate (Calgary, Software Engineering)  
Allen Chi, current M.Sc. candidate (Calgary, Software Engineering)  
George Luo, current M.Sc. candidate (Calgary, Software Engineering)  
Ibrahim Jadalown, current M.Sc. candidate (Calgary, Software Engineering)  
Gim Buay Ng, current M.Sc. candidate (Calgary, Software Engineering)  
Paul Werbicki, current M.Sc. candidate (Calgary, Software Engineering)  
Jason Heard, current M.Sc. candidate (Calgary, Computer Science)  
Gabriel Becerra, current M.Sc. candidate (Calgary, Computer Science)  
Chad La Fournie, current M.Sc. candidate (Calgary, Software Engineering)  
Jerrall Prakash, current M.Sc. candidate (Calgary, Software Engineering)

**Examiner for:**

Roberto Flores-Mendez, received M.Sc. 1997, (Calgary, Software Engineering)  
Pavol Federl, received M.Sc. 1997, (Calgary, Computer Science)  
Don Cox, received M.Sc. 1998, (Calgary, Computer Science, HCI)  
S. Yadav, received M.Sc. 1998, (Calgary, Mech. & Manuf. Eng., Interface support for CAD)  
Donald Cooprie, received M.Sc. 1998, (Calgary, Software Engineering, Personal S/W Proc.)  
Q. Li, received M.Sc. 1998, (Calgary, Software Engineering, Process Modeling)  
A. Guy, received M.Sc. 1998, (Calgary, Computer Science, An OO Graphics Tool)  
Dana Herlea, PhD candidacy exam, 1998 (Calgary, Computer Science, Requirement Eng.)  
J. Daengdie, received PhD 1998, (Computer Science, U. of N.England, Australia, CBR)  
Y. Chen, PhD exam 1998 (Computer Science, Memorial U., Newfoundland, OO Dev. Tool)  
Adi Damian, received M.Sc. 1999, (Calgary, Computer Science, SimKit Framework)  
Behzad Foroughi, received M.Sc. 1999, (Calgary, Mech. & Manuf. Eng., Decision Support)  
Jun Sun, received M.Sc. 1999, (Calgary, Mech. & Manuf. Eng., Production Scheduling)  
YunBo Wang, received M.Sc. 2000 (Calgary, Software Engineering, Mobile Agents)  
William O, received M.Sc. 2000 (Calgary, Mech. & Manuf. Eng., Scheduling Algorithms)  
Lu Chen, received M.Sc 2001 (Calgary, Elect & Comp. Eng, Software Reliability)  
Christopher McPhee, received M.Sc. 2001 (Calgary, Elect & Comp. Eng, S/W Reliability)  
Vanita Shroff, received M.Sc. 2001 (Calgary, Elect & Comp. Eng, S/W Metrics)  
Zhiqiang Zhao, received M.Sc. 2002 (Calgary, Elect & Comp. Eng, Web-based S/W)  
Chethanda Kuloor, received M.Sc. 2002 (Calgary, Elect & Comp. Eng, S/W Reuse)  
Zhinqiang Zhao, MSc. 2002 (Calgary, Elect. & Comp. Eng. Web-based S/W)  
Xanxin Xu, MSc. 2002, (Calgary, Mech. & Manuf. Eng., Distributed Databases)

**Postdoctoral Fellows:**

Niek Wijngaards, 1998.  
Michele Jacobson, 1998-99.

**Refereed Publications**

2004 conference papers

Flores, R, & Kremer, R. (2004). International Conference on Autonomous Agents and Multi-Agent Systems, New York, USA. July, 2004.

Flores, R, & Kremer, R. (2004). Canadian AI, London, Ont., Canada. May 16-19.

2003 conference papers

Kremer, R., Flores, R, LaFournie, C. (2003). A Performative Type Hierarchy and Other Interesting Considerations in the Design of the CASA Agent Architecture. Advances in Agent

- Communication. International Workshop on Agent Communication Languages, ACL 2003, Revised and Invited Papers. Melbourne, Australia, July 2003. pp.59-74
- 2002 journals Weiming Shen, Robert Kremer, Mihaela Ulieru and Douglas Norrie (2002). An Agent-Based Infrastructure for Internet-Enabled Collaborative Enterprises. *International Journal of Production Research* (Paper #JEM/CRV/IJPR 0010037.) In press.
- Flores, R.A. and Kremer, R.C. (2001) A Formal Theory for Agent Conversations for Action. *Computational Intelligence*, Special Issue on Agent Communication Languages, B. Chaib-draa and F. Dignum (Eds.), Blackwell Publishers, Volume 18, Number 2.
- 2002 workshops Flores, R.A. & Kremer, R.C. A Model for Flexible Composition of Conversations: How a Simple Conversation got so Complicated, in M.P. Huget, F. Dignum & J.L. Koning (Eds.), Proceedings of the 3rd Workshop on Agent Communication Languages and Conversation Policies, First International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS 2002), Bologna, Italy, July 15-19, 2002..
- 2001 collections Flores, R.A. and Kremer, R.C. (2001) Formal Conversations for the Contract Net Protocol. Proceedings of the Third European Agent Systems Summer School on Multi-agent Systems (EASSS 2001), Advanced Course on Artificial Intelligence (ACAI 2001), Student Sessions, Czech Technical University, Prague, Czech Republic, July 2-13, 2001. ISBN 80-01-02387-7, pp. 109-118.
- 2001 conference papers Flores, R.A. and Kremer, R.C. (2001) Bringing Coherence to Agent Conversations. Proceedings of the Second Workshop on Agent-Oriented Software Engineering, Fifth International Conference on Autonomous Agents (Agents'2001), M. Wooldridge, P. Ciancarini, and G. Weiss (Eds.), Montreal, Canada, May 28-June 1, 2001, pp.85-92.
- 2000 journals Jacobsen, D. M., Kremer, R., & Shaw, M. L. G. (2000). Web-Based Distance Education Learning Environments in Graduate Software Engineering. *The International Journal of Continuing Engineering Education and Life-Long Learning* (IJCEELL), Special Theme Issue: "Internet based learning and the future of education". Inderscience Enterprises Ltd, Geneva, Switzerland. [On-line]. Available: <http://www.mscp.edte.utwente.nl/ptk/>
- Jacobsen, D. M., Kremer, R., & Shaw, M. L. G. (2000). Experiments with Distance Learning in Software Engineering Graduate Courses. *Inroads: Special Interest Group on Computer Science Education (SIGCSE) Bulletin*, Association for Computing Machinery (ACM), 32(2), 56-59. [On-line]. Available: <http://www.acm.org/sigcse/bulletin/>
- Ulieru, M., Norrie, D., Kremer, R., Shen, W. (2000). A Multi-Resolution Collaborative Architecture for web-Centric Global Manufacturing, *Information Science*, volume 127, Journal no.: 7669, ISSN #0020-0255, August 2000.
- 2000 collections Roberto A. Flores, Rob C. Kremer & Douglas H. Norrie. (2000). "An Architecture for Modeling Internet-based Collaborative Agent Systems." *Selected Papers from The Autonomous Agents 2000 Workshop on Infrastructure for Scalable Multi-agent Systems*, eds. Thomas A. Wagner & Omer F Rana. Springer, Berlin, 2000.
- 2000 conference papers Jacobsen, D. M. & Kremer, R. (2000) Online Testing and Grading Using WebCT in Computer Science. *Proceedings of the WebNet World Conference on the WWW and Internet (Webnet 2000)*. Association for the Advancement of Computing in Education, San Antonio, Texas, October 20 - November 4, 2000.
- Kremer, R., Norrie, D. H., Flores, R. & Shen, W. (2000). An Infrastructure for Flexible, Modular, Multi-user Intelligent Interfaces. *Proceedings of the 2000 IEEE International Conference on Systems, Man, and Cybernetics*, IEEE Computer Society, Nashville, Tennessee, October 8-11, 2000. pp. 739-744
- Kremer, R. & Norrie, D. H. (2000). Architecture and Design of a Holonic Visual Interface. *Proceedings of the 2000 IEEE International Conference on Systems, Man, and Cybernetics, Holonic and Multi-Agent Manufacturing Systems Workshop*, IEEE Computer Society, Nashville, Tennessee, October 8-11, 2000. pp. 1715-1720.

Norrie, D.H., Ulieru, M., Kremer, R., Shen, W. (2000). "Self-Organizing Multi-Agent Architecture for Web-Centric Collaborative Enterprises", *Workshop on Web-Based Infrastructures and Coordination Architectures for Collaborative Enterprises, Ninth IEEE International Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises*, National Institute of Standards and Technology (NIST), Gaithersburg, Maryland, USA, June 14-16, 2000.

Flores, R. A., Kremer, R. C. & Norrie, D. H. (2000). "An Architecture for Modeling Internet-based Collaborative Agent Systems." *Proceedings of the Autonomous Agents 2000 Workshop on Infrastructure for Scalable Multi-agent Systems, Fourth International Conference on Autonomous Agents (Agents 2000)*, Barcelona, Catalonia, Spain, June 3-7, 2000, IEEE Press.

Fuhua Lin, Douglas H. Norrie & Rob Kremer. (2000). "Incorporating Conversation Managers into Multi-agent Systems." *Proceedings of the Autonomous Agents 2000 Workshop on Infrastructure Agent Languages and Conversation Policies, Fourth International Conference on Autonomous Agents (Agents 2000)*, Barcelona, Catalonia, Spain, June 3-7, 2000, IEEE Press.

Eberlein, A. & Kremer, R. (2000). The Application of an Intelligent Requirements Engineering Tool in an Agent-Based Framework. *Proceedings of 2000 IEEE Canadian Conference on Electrical and Computer Engineering*, IEEE Computer Society, Halifax, Nova Scotia, May 7-19, 2000.

Eberlein, A. & Kremer, R. (2000). Integrating the Components of an Intelligent Telecom Design Tool into an Agent-Based Framework. *Proceeding of the Seventh IEEE International Conference and Workshop on Engineering Computer Based Systems (ECBS'2000)*. IEEE Computer Society, Edinburgh, Scotland, April 3-5, 2000.

1999 collections

Lin, F., Norrie, D.H., Shen, W., Kremer, R. (1999). A Schema-Based Approach to Specifying Conversation Policies, *Issues in Agent Communication*, (Eds. Dignum, F., Greaves, M.), Lecture Notes in Artificial Intelligence, Springer, 1999.

1999 conference papers

W. Shen and D. H. Norrie, and R. Kremer. (1999). Towards an Infrastructure for Internet Enabled Collaborative Agent Systems, *Proceedings of the Twelfth Workshop on Knowledge Acquisition, Modeling and Management (KAW'99)*, Banff, Alberta, Canada, 16 - 21 October, 1999

Shen, W., Norrie, D.H., and Kremer, R., (1999). Developing Intelligent Manufacturing Systems Using Collaborative Agents, *Proceedings of the Intelligent Manufacturing Systems Conference (IMS'99)*, Leuven, Belgium, Sept. 22-24, 1999.

Shen, W., Ulieru, M., Norrie, D.H. and Kremer, R. (1999). Implementing the Internet Enabled Supply Chain through a Collaborative Agent System, *Agents'99 Workshop on Agent Based Decision-Support for Managing the Internet-Enabled Supply-Chain*, Seattle, WA, June 1999.

Jacobsen, D.M., Wijngaards, M., Kremer, R., Shaw, M. (1999). The Learning Web: A Comparison of Learning Environments in Concurrent Classroom and Distance Education Sections of a Software Engineering Graduate Course. *Proceedings of ED-MEDIA & ED-TELECOM 1999: World Conference on Educational Multimedia/Hypermedia & Educational Telecommunication*, June 19 to 24, 1999, Seattle, Washington, USA.

Kremer, R., Jacobsen, D.M., Wijngaards, N., Shaw, M. (1999). The Learning Web: The Instructor's Experience In Concurrent Classroom and Distance Education Sections of a Software Engineering Graduate Course. *ED-MEDIA & ED-TELECOM 1999: World Conference on Educational Multimedia/Hypermedia & Educational Telecommunication*, June 19 to 24, 1999, Seattle, Washington, USA.

Wijngaards, N. J.E., Jacobsen, D. M., Kremer, R., & Shaw, M. L. G. (1999). The Learning Web: A Technical Evaluation of WebCT in Concurrent Classroom and Distance Education Sections of a Software Engineering Graduate Course. *Proceedings of ED-MEDIA & ED-TELECOM 99 World Conference on Educational Multimedia/Hypermedia & Educational Telecommunication*, Seattle, WA, June 19-24. [On-line]. Available: [http://www.acs.ualgary.ca/~dmjacobs/seng/edmedia99\\_wijngaards2.html](http://www.acs.ualgary.ca/~dmjacobs/seng/edmedia99_wijngaards2.html)

- Jacobsen, D. M., Kremer, R., & Shaw, M. L. G. (1999). An Examination of Distance Education Learning Environments in Two Software Engineering Graduate Courses. *Proceedings of Western Canadian Conference on Computing Education 1999 (WCCCE'99)*, Hosted by British Columbia Computers in Education Committee & Computer Science Department, Okanagan University College, Kelowna, BC, May 6 & 7, 1999. [On-line]. Available: [http://www.acs.ucalgary.ca/~dmjacobs/seng/wccce99\\_paper.html](http://www.acs.ucalgary.ca/~dmjacobs/seng/wccce99_paper.html)
- Lin, F., Norrie, D.H., Shen, W., Kremer, R.. (1999). A Schema-based Approach to Specifying Conversation Policies, *Proceedings of Agents'99 Workshop on Agent Based Decision-Support for Managing the Internet-Enabled Supply-Chain*, Seattle, WA, May 1-5, 1999,.
- Jacobsen, D. M., Wijngaards, N. J. E., Kremer, R., Shaw, M. L. G., & Gaines, B. (1999). The comparative evaluation of classroom and distance sections of an industrial software engineering graduate course. *Proceedings of M/SET 99: International Conference on Mathematics/Science Education & Technology*, San Antonio, Texas, March 1-4, 1999. Available: [http://www.acs.ucalgary.ca/~dmjacobs/seng/mset99\\_paper.html](http://www.acs.ucalgary.ca/~dmjacobs/seng/mset99_paper.html)
- 1998 conference papers
- Gaines, B., Jacobsen, D. M., Kremer, R., Shaw, M. W., Wijngaards, N. (1998). The comparative evaluation of a classroom and distance industrial software engineering graduate course. *TeleLearning 1998 - Building Global Telelearning Communities*, Vancouver, British Columbia, November 14 – 17, 1998.
- Kremer, R. (1998). Visual Languages for Knowledge Representation, *KAW'98: Eleventh Workshop on Knowledge Acquisition, Modeling and Management*, Voyager Inn, Banff, Alberta, Canada, April 18-23, 1998
- Lucose, D., Kremer, R.. (1998). Visual Modeling of Problem Solving Methods using Annotated Flow Chart and Executable Conceptual Structures. *Proceedings of the International Conference on Computing and Intelligent Multimedia Applications*, Monash University, Victoria, Australia. February 9-11, 1998.
- 1997 conference papers
- Kremer, R. (1997). A Concept Mapping Tool to Handle Multiple Formalisms. *Proceedings of the AAAI Spring Symposium, Workshop on Artificial Intelligence in Knowledge Management*, Stanford University, Palo Alto, CA, May, 1997. American Association for Artificial Intelligence. pp. 86-93.
- Kremer, R., Lukose, D. & Gaines, B. R. (1997). Knowledge Modeling using Annotated Flow Chart. Lukose, D., Delugach, H., Keeler, M., Searle, L. & Sowa, J. (Eds.), *Proceedings of the International Conference on Conceptual Structures*, Seattle, Washington, June, 1997, Springer, Berlin. pp. 213-227.
- Kremer, R. (1997). Multi-user Interactive Concept Maps for the Learning Web. Müldner, T. & Reeves, T.C. (Eds.), *Proceedings of ED-MEDIA/ED-TELECOM 97: World Conference on Educational Multimedia/Hypermedia and Telecommunications*. Charlottesville, VA: Association for the Advancement of Computing in Education, June, 1997. pp 601-606.
- 1996 conference papers
- Kremer, R. (1996). Toward a Multi-User, Programmable Web Concept Mapping "Shell" to Handle Multiple Formalisms. Gaines, B. R. & Musen, M. (Eds.), *Proceedings of the 10th Banff Knowledge Acquisition for Knowledge-Based Systems Workshop*. Banff, Alberta. SRDG Publications, Dept. of Computer Science, University of Calgary, Canada. pp. 48.1-48.20.
- Kremer, R. & Gaines, B. R. (1996). Embedded Interactive Concept Maps in Web Documents. Maurer, H. (Ed.), *Proceedings of WebNet'96: World Conference of the Web Society*. San Francisco, CA, USA. Ed. Association for the Advancement of Computing in Education. Charlottesville, VA. pp. 273-280.
- 1995 conference papers
- Lukose, D., Mineau G., Mugnier M., Moller J., Martin P., Kremer R. & Piero Zairi G. (1995). Conceptual Structures for Knowledge Engineering and Knowledge Modeling. Ellis, G. et al. (Eds.), *Proceedings of the Fourth International Conference on Conceptual Structures*, Santa Cruz, California, August, 1995. G. Springer, Berlin.

1994 conference papers  
 Kremer, R. (1995). The Design of a Concept Mapping Environment for Knowledge Acquisition and Knowledge Representation. Gaines, B. R. & Musen, M. (Eds.), *Proceedings of the 9th Banff Knowledge Acquisition for Knowledge-Based Systems Workshop*. Banff, Alberta. . SRDG Publications, Dept. of Computer Science, University of Calgary, Canada. pp. 23.1-23.19.

Kremer, R. (1994). Concept Mapping: Informal to Formal. Tepfenhart, W., Dick, J. & Sowa, J. (Eds.), *Proceedings of the Third International Conference on Conceptual Structures, Knowledge Acquisition Using Conceptual Graphs Theory Workshop*. University of Maryland College Park, MD., Aug 19, 1994. pp. 152-167.

Kremer, R. & Gaines, B. R. (1994). Groupware Concept Mapping Techniques. *Proceedings SIGDOC'94: ACM 12th Annual International Conference on Systems Documentation*, Banff, Canada. ACM Press, New York. pp. 156-165.

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1993 conference papers  
 Kremer, R. (1993). A Concept Map Based Approach to the Shared Workspace. MSc. Thesis, Department of Computer Science, University of Calgary, Calgary, Canada.

1991 conference papers  
 Kremer, R. (1991). Experience in Applying KRS to an Actual Business Problem. Boose, J. & Gaines, B. R. (Eds.) *Proceedings of the 6th Banff Knowledge Acquisition for Knowledge-Based Systems Workshop*. Banff, Canada. SRDG Publications, Dept. of Computer Science, University of Calgary, Canada. pp. 11.1-11.12.

### Other Publications

Jacobsen, M., Kremer, R., & Shaw, M. (1999). An Examination of Distance Education Learning Environments in Two Software Engineering Graduate Courses. *New Currents in Teaching and Technology*, 6 (4), May. [On-line]. Available: <http://www.ucalgary.ca/pubs/Newsletters/Currents/Vol6.4/twosoftware.html>

Jacobsen, M., Kremer, R., & Flores, R. (1999). On-line testing and grading: WebCT in Computer Science. *New Currents in Teaching and Technology*, 6 (3), April. [On-line]. Available: <http://www.ucalgary.ca/pubs/Newsletters/Currents/Vol6.3/webct.html>

### Grants and Awards

2002 to 2006 NSERC Operating grant, total \$100,000, \$20,000/an, Principle Investigator

2000 to 2003 Alberta Advanced Education, Alberta Software Engineering Research Consortium, operating grant, total \$600,000/an, my portion \$38,000/an, Investigator

1998 to 2001 NSERC Operating grant, total \$65000, \$13000/an, Principle Investigator

1998 to 2000 Alberta Advanced Education Multimedia Advanced Computations Infrastructure Grant, total \$2,000,000, my portion \$5000/an, Co-Investigator

1999 to 2000 NSERC IOR (Industry Oriented Research) Grant, total \$42720, Principle Investigator

1999 Alberta Advanced Education LEE3 (Learning Enhancement Envelope), \$438900, my portion \$10,000 Co-Investigator

1998 NSERC Equipment grant, total \$65296, Co-Investigator

1997 to 1998 University of Calgary and Government of Alberta Research Excellence Envelope, total \$25,000, Principle Investigator

1998 University of Calgary URGC Travel Grant, Total \$1320, Principle Investigator

1997 to 1998 University of Calgary Starter grant, total \$9777, Principle Investigator

1997 to 1998 International Databases Inc., Calgary Operating grant, total \$12000, Principle Investigator

1997 to 1999 Research Sponsorship. Smart Technologies Inc, Calgary, Alberta. \$56K.

1997 Research Excellence Envelope. .Government of Alberta and the University of Calgary. \$25K

1997 Starter Grant, University of Calgary. \$10K.

1997

Best paper award. World Conference on Educational Multimedia/Hypermedia and Telecommunications, 1997, Calgary, Canada.

1994 to 1996

NSERC Postgraduate Scholarship. PGS B, \$35K

## Professional Experience

July, 1997 to present

**Department of Computer Science**  
**University of Calgary**  
**Calgary, Alberta**

*Assistant Professor.* Teaching responsibilities include supervision of graduate students and teaching two undergraduate courses, "Practical Software Engineering" (3<sup>rd</sup> year) and "Advanced Information Systems" (4<sup>th</sup> year) as well as graduate courses, which include "Object Theory" and "Design Patterns". Administrative responsibilities include serving on the curriculum committee and serving as an undergraduate student advisor. Research responsibilities include ongoing research into visual concept mapping languages and knowledge representation.

January, 1997 to  
April, 1997

**Department of Computer Science**  
**University of Calgary**  
**Calgary, Alberta**

*Graduate Teaching Fellowship.* Taught CPSC 451 "Practical Software Engineering". Responsible for lectures, assignments, exams, and supervising teaching assistants. This is a project-oriented course where the students work in groups to complete a single large project over the entire term.

July, 1995 to  
March, 1997

**Intelligent Databases International Ltd.**  
**Calgary, Alberta**

*External Software Consultant.* Provide information, design, and supervision on the development of an expert system front end to a GPS database. More recently, I have been working on IDI's project to provide database access through web browsers. This work is through my consulting company, Metasystems Computing Ltd.

December, 1992 to  
June, 1997

**Smart Technologies Inc.**  
**Calgary, Alberta**

*Senior Researcher.* Research and design on the "Smart Ideas" concept mapping application. This application began as part of my MSc thesis while I was at Shell Canada. Shell Canada subsequently sold the rights to the software to Smart Technologies. It has been released as a commercial product in third quarter, 1995. My work at Smart Technologies is taking place concurrent to my PhD work.

July, 1988 to  
September, 1992

**Shell Canada Ltd.**  
**Head Office Research**  
**Calgary, Alberta**

*Researcher.* Research and development in artificial intelligence (expert systems) and groupware. Expert systems developed or prototyped include toxicology, air drilling, foam drilling, automotive diagnostics, security systems, and spill management using rule-based shell systems; gas marketing using an experimental Prolog-like language (Echidna); and a sales transaction diagnostic system using an experimental graphical rule-based system called KRS. Groupware work included the development included the prototyping of the "Accord" concept mapping program (later sold to Smart Technologies) and the empirical investigation of this and other groupware systems with respect to the various user groups at Shell.



December, 1982 to  
July, 1988

**Shell Canada Ltd.  
Calgary Research Centre  
Calgary, Alberta**

*Programmer/System Manager/System Programmer.* Application programs included lab data acquisition systems, and various research-support programs such as data visualization and analysis. System management and programming included management of clusters of symmetric multi-processor VAX systems under the VMS operating system, as well as UNIX workstations.

December 1979 to  
December 1982

**Shell Canada Ltd.  
Calgary Exploration and Development Laboratory  
Calgary, Alberta**

*Laboratory Technologist/Programmer.* Duties included various core analyses as well as the development of a complete lab data acquisition system using a network of HP minicomputers.

**Professional Service**

2004

**Assistant Head, Graduate Affairs, Department of Computer Science, University of Calgary**

Role: continuing students

Responsibilities: deal with issues concerning continuing students in the program, serve on the grad committee.

2004

**Hiring Committee, Department of Electrical Engineering, University of Calgary**

Role: external member

Responsibilities: attend interviews, presentations, and decision meetings.

2002-2003

**Knowledge Capture Conference 2003 Florida, USA., Oct 23-25, 2003  
(Registration Chair)**

Roles: Registration Chair, web site design and maintenance, volunteer organization

Responsibilities: Handle all arrangements for registration (organization, on-line registration, on-site registration, financial), design and prepare conference web pages, on-line registration system, coordinate student volunteers.

2002-2004

**Grad Committee**

Roles: Member; member program sub-committee.

Responsibilities: review and judge student applications for graduate school, review and judge grad student grant applications, review and update grad program (courses, comprehensive exam and thesis & dissertation defense standards and procedures).

2000-2001

**Knowledge Capture Conference 2001 Victoria, B.C., Oct 22-23, 2001 (Local Arrangements Chair, Registration Chair)**

Roles: Local Arrangements Chair, Registration Chair

Responsibilities: Prepare are local arrangements (city, hotel selection; hotel arrangements) for 200-attendee conference, design and prepare conference web pages, on-line registration system.

2000-2001

**Research Infrastructure Committee, Department of Computer Science**

Roles: Member

Responsibilities: Oversee research resources in the department

2001	<p><b>European Knowledge Acquisition Workshop (EKAW'2002), Spain. (Program Committee)</b>  Roles: Program committee member  Responsibilities: Referee submitted papers</p>
2001	<p><b>International Conference on Conceptual Structures (2002) (Program Committee)</b>  Roles: Member, Reviewer  Responsibilities: Production of Conference Proceedings, Conference Program</p>
2001	<p><b>Fifth International Conference on Autonomous Agents (Agents 2001), Montreal, Canada, May, 2001. (Program Committee)</b>  Roles: Program committee member  Responsibilities: Referee submitted papers</p>
1998-2001	<p><b>Curriculum Committee, Department of Computer Science</b>  Roles: Member  Responsibilities: Updates to calendar, new program planning</p>
1998-present	<p><b>HMS (Holonc Manufacturing Systems) meetings.</b>  HMS is an international consortium including industry, university and research institution.  Roles: Researcher  Responsibilities: Attend three international meetings per year, and participated as the first author of the primary Canadian research proposal and deliverable reports.</p>
1998-present	<p><b>Undergraduate Program Councilor, 1998-present</b>  Roles: Councilor  Responsibilities: Referee submitted papers</p>
1995-present	<p><b>International Journal of Human-Computer Studies.</b>  Roles: Referee  Responsibilities: Occasional refereeing.</p>
2000	<p><b>Fourth International Conference on Autonomous Agents (Agents 2000), Workshop, Barcelona, Catalonia, Spain, June 3-7, 2000. (Program Committee)</b>  Roles: Program committee member  Responsibilities: Referee submitted papers</p>
2000	<p><b>Pacific Rim Knowledge Acquisition Workshop (PKAW'2000), December 11-14, 2000, Sydney. (Program Committee)</b>  Roles: Program committee member  Responsibilities: Referee submitted papers</p>
2000	<p><b>12th International Conference on Knowledge Engineering and Knowledge Management, Juan-les-Pins, French Riviera, October 2-6, 2000. (Program Committee)</b>  Roles: Program committee member  Responsibilities: Referee submitted papers</p>
1999	<p><b>Knowledge Acquisition Workshop (1999), Banff, Alberta (Co-chair)</b>  Roles: Chair, Reviewer, Local Organizer</p>

- Responsibilities: Production of Workshop Proceedings, Conference Program, all facilities.
- 1999 **International Conference on Conceptual Structures (1999) (Program Committee)**  
 Roles: Member, Reviewer  
 Responsibilities: Production of Conference Proceedings, Conference Program
- 1999 **Autonomous Agents (1999), Seattle, Washington (Program Committee)**  
 Roles: Registrations Chair, Volunteer Coordinator  
 Responsibilities: Organize registration, volunteers for conference of 450 delegates
- 1999 **Twelfth Workshop on Knowledge Acquisition, Modeling and Management (KAW'99), Banff, Canada (Editorial Board)**  
 Roles: Editorial board member  
 Responsibilities: Production of Workshop Proceedings, Web pages, Conference Program.
- 1999 **International Conference on Conceptual Structures (ICCS'99) (Editorial Board)**
- 1999 **Mentored new instructors for CPSC 451, SENG 621, and SENG 623., 1999.**
- 1998 **International Conference on Conceptual Structures (1998), Montpellier, France (Program Committee)**  
 Roles: Member, Reviewer  
 Responsibilities: Production of Conference Proceedings, Conference Program
- 1998 **Faculty of Science Visioning Task Force, 1998**  
 Roles: Member  
 Responsibilities: Establish a faculty planning vision.
- 1998 **Faculty of Continuing Education Faculty Council, 1998**  
 Roles: Faculty of Science representative to Faculty of Continuing Education  
 Responsibilities: Represent the Faculty of Science
- 1998 **International Conference on Conceptual Structures, 1998 (ICCS'98).**  
 Member of editorial committee.
- 1998 **Banff Knowledge Acquisition Workshop, 1998 (KAW'98).**  
 Serving as track chair for the visual languages, conceptual graphs, Sisyphus, and demonstration tracks, and on the organization committee.
- 1997 **International Conference on Conceptual Structures, 1997 (ICCS'97).**  
 Served on the editorial committee.
- 1996 **Banff Knowledge Acquisition Workshop, 1996 (KAW'96).**  
 Served as demonstration track chair, and on the organization committee.
- 1995 **Banff Knowledge Acquisition Workshop, 1995 (KAW'95).**  
 Served as demonstration track chair, and on the organization committee.
- 1993 **Banff Knowledge Acquisition Workshop, 1993 (KAW'93).**  
 Served on organization committee.