

David Brokenshire

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Education

Ph.D. Candidate, Computer Science Massey University, New Zealand (2007-2008)

- Research focus on Causal Modelling and Statistical Machine Learning with applications to education theory, educational technology

M.Sc., Interactive Arts and Technology Simon Fraser University (2007)

- Research focus on Artificial Intelligence, Machine Learning, Bayesian networks and causal models with applications to education
- Thesis: Discovering Causal Modles of Self-Regulated Learning

B.Sc., Information Technology Simon Fraser University (2005)

- The Information Technology program at SFU focuses on software engineering and computer science with interdisciplinary electives in interactive arts and business management.

Technical Skills

Languages Used	Development Environments	Databases and Related
<ul style="list-style-type: none">• Java• Python• Ruby• C++ inc STL• Perl• PHP• Javascript	<ul style="list-style-type: none">• Windows/Mac/Linux• CVS/SVN• xUnit• ant/make/rake• Textmate• IntelliJ IDEA• Eclipse	<ul style="list-style-type: none">• SQL• mySQL• Java DB development• ActiveRecord
Software	Development Methodologies and Skills	Knowledge Areas
<ul style="list-style-type: none">• Tomcat• Apache• Ruby on Rails• Prototype & Scriptaculous	<ul style="list-style-type: none">• OOA/D• Unit Testing/TDD• UML• Design Patterns• Agile methods	<ul style="list-style-type: none">• Educational Technology• Artificial Intelligence• Machine Learning• Multi-agent systems• Causal models

Work Experience

Co-Founder Liffsoft.com 2008 - present

At Liffsoft we focus on creating useful tools to take suffering out of technology. Our first project is a tool to automatically fix broken web links. Project involves using information retrieval and machine learning techniques to recognize pages which no longer serve their original intent, and to find a set of the best replacement pages which are still active on the web.

- Main Duties:
 - Software design and Development

- Key Achievements:
 - Identified problem inhibiting research in user modeling and created original design for solving interoperability problem
- Technical Environment:
 - Java, JADE/FIPA agent development environment, RDF/OWL ontologies

Lead Software Engineer SCORMIT Project 2003
University Industry Liason funded creating a tool to automatically collect legacy eLearning content from the web and package it according to the SCORM standard, allowing its use in modern Learning Management Systems. As a software engineer I was responsible for all development aspects including design, development, documentation, and testing.

- Main Duties:
 - Designing software to meet business requirements
 - Software development
- Key Achievement:
 - Implemented new functionality for recognizing portions of learning content to be automatically marked up and packaged
- Technical Environment:
 - Python, XML/XSLT, SCORM, IEEE LOM, Windows XP

Software Engineer Learning Kit 2003-2004
A Canadian government funded research project creating software tools to improve learning and self-regulation of students. I was responsible for development and documentation of UI elements.

- Main Duties:
 - Development of UI components using Java Swing
 - Writing technical documentation
- Technical Environment:
 - Java, Mac OS/X & Windows XP

C++ Software Developer SFUnleashed RoboCup AI Soccer Team 2001-2003
SFUnleashed was a AI soccer team participating in the Robocup AI league to develop new AI techniques to solve the grand challenge of robots playing soccer against expert humans. I was the initial developer on the project.

- Main Duties:
 - Researching agent localization, cooperation and strategy
 - Running experiments and statistical analysis
 - Performance sensitive C++ software development
- Key Achievements:
 - Took project from set up including selecting code base, technology, design, to deployment and mentoring of new developers
- Technical Environment:
 - C++, Linux, X11

Selected Publications

David Brokenshire and Vive Kumar (2008). *Causal Models for Educational Technology*. *The 8th IEEE International Conference on Advanced Learning Technologies*, Santander, Spain, July 2008.

Pat Loughheed, **David Brokenshire**, Vive Kumar, and Marek Hatala (2006). *Moving legacy learning content to SCORM: SCORMit!* *International Conference on SCORM*. Taipei, Taiwan, 2006.

Pat Lougheed, Brittney Bogyo, and **David Brokenshire** (2005). *Towards Formalizing Electronic Portfolios*. Workshop on Applications of Semantic Web Technologies for e-Learning at the Third International Conference on Knowledge Capture. 2005.

David Brokenshire, Jurika Shakya, and Vive Kumar (2005). *Providing Information for Mixed Initiative Interaction via Interoperable User Modelling*. AAAI Fall Symposia on Mixed-Initiative Problem-Solving Assistants, November 2005.

Patrick Lougheed, **David Brokenshire**, Brittney Bogyo, Mayo Jordanov, Vive Kumar (2005). *Applications of Mixed-Initiative Interfaces and Intelligence to Electronic Portfolios*, AAAI Fall Symposia on Mixed-Initiative Problem-Solving Assistants, November 2005.

Jane Fee, Pat Lougheed, **David Brokenshire**, Brittney Bogyo, Mayo Jordanov Robin Johnson, and Vive Kumar (2004). *ePortfolio: issues for research*. International Conference on ePortfolio. La Rochelle: France, 2004.

David Brokenshire, Brittney Bogyo and Vive Kumar (2004) *Towards an Upper-Level Ontology for Information Exchange in ePortfolios*. International Conference on ePortfolio. La Rochelle: France, 2004.

Vadim Kyrlyov, **David Brokenshire** and Eddie Hou (2004). *Optimizing Precision of Self-Localization in the Simulated Robotics Soccer*, RoboCup 2004: Robot Soccer World Cup VIII. Lisboa, 2004.

Professional Interests and Associations

Professional Interests

- Artificial Intelligence
 - Machine Learning
 - Multi agent systems
 - Knowledge Representation
- Educational Technology
 - Student and User Modelling
 - Educational Games
- Software Engineering
- Urban & Traffic Modelling

Professional Associations

- Association for Computing Machinery (ACM)
- Canadian Information Processing Society (CIPS)
- American Association for Artificial Intelligence (AAAI)
- Canadian Society for Computational Studies of Intelligence (CSCSI)
- Member IEEE

Selected Community Involvement

Convocation Speaker	SFU Convocation	June 2nd 2005
Student Senator	Simon Fraser University	2002-2003
Invited Speaker	SFU Surrey Official Opening	Sept 9th 2003
Volunteer	Rick Hansen Wheels in Motion	2003
Member	Faculty Search Committee	2002
Member	SIAT Long Term Planning Committee	2002-2003
Member	SIAT Undergraduate Curriculum Committee	2002-2004
Representative	TechBC Learner Association	2001

References

Provided upon request.