

Pramudi Suraweera

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Education

- 2003-2006 **Doctor of Philosophy**
University of Canterbury
- 2000-2001 **Master of Computer Science with Distinction**
University of Canterbury
- 1997-1999 **Bachelor of Computer Science with First Class Honours**
University of Canterbury

Achievements

Academic:

- 2007 PhD thesis nominated for the Dean's list (recognised as one of the top 10% of all PhDs).
- 2003 Won the University of Canterbury Doctoral Scholarship.
- 2000 Won the University of Canterbury Doctoral/Masters Scholarship.
- 1999 Won the G B Battersby-Trimble Scholarship in Computer Science for B.Sc. honours (final) year studies.
- 1997 Won the Gertrude Ardagh Holmes Bursary Fund scholarship.
- 1997 Direct entry to second year B.Sc. (Computer Science) at the University of Canterbury - based on excellent university entrance exam results.
- 1996 Obtained A Bursary standard with two scholarships at university entrance examination.
- 1996 Distinction, Australian Mathematics Competition, Senior Div.

Other:

- 1996 Runner up Dux (Second best student in school- university entrance level), Newlands College, Wellington, New Zealand.
- 1995 Represented Sri Lanka at SEARCC International Software Competition, Colombo, Sri Lanka.
- 1995 Merit award in national schools software competition, Computer Society of Sri Lanka.

1994 Inter-house Swimming Champion, (Under 16) D. S. Senanayake College, Colombo, Sri Lanka.

Work Experience

Jan 2003 – Today Department of Computer Science and Software Engineering, University of Canterbury

Oct 2006 – Today **Post-Doctoral Fellow**

- Led a team of three developing ASPIRE, a web based authoring server. ASPIRE was developed using OO Allegro Common Lisp along with AJAX (Javascript, XML, HTML) and Java.
- ASPIRE was completed on time under budget and currently available for all New Zealand tertiary academics.
- Produced user and system documentation.
- Composed research papers and conducted workshops at international conferences.
- Worked with two academics to produce tutoring systems for their courses. A system for Capital Investments is already complete and evaluated, other system for thermodynamics currently being developed.

Jun 2005 – Oct 2006 **Researcher/ Software Engineer**

- Led a team of four developing ASPIRE, a web-based system for authoring and serving Intelligent Tutors.
- Designed ASPIRE with UML and Design patterns.
- Produced requirements documentation.

Jan 2003 – Dec 2006 **Lecturer/ Tutor**

- Produced course material and conducted lectures for first year Algorithms and Data Structures course.
- Conducted tutorials and labs for second and third year database courses.

Apr 2002 – Sep 2002 **Quality Assurance Engineer**
Virtusa, Boston, USA

- Onsite quality assurance engineer at EMC² corporation, Milford, Boston for three month project, porting a Solaris data storage server to Linux.
- Member of quality assurance team for project that involved development of web-based customer interaction tools for Qwest communications, USA.

- Feb 2002 – Mar 2002 **Lecturer**
Sri Lanka Institute of Information Technology, Sri Lanka
(A University affiliated with Curtin University, Perth, Australia)
- Produced course material and conducted lectures for second year Multimedia course (OpenGL).
 - Conducted tutorials and labs for first year Java programming course.
- Dec 1999 – Oct 2001 **Programmer / Analyst**
Information Technology Services, University of Canterbury
- Member of team responsible for introducing web enrolment at the University.
 - In-charge of an in-house web-based interface to the student management system (connecting to Oracle database)
 - In-charge of University's parking information server.
- Mar 1999 – Oct 2001 **Tutor**
Department of Computer Science, University of Canterbury
- Conducted tutorials and labs for the following courses
- Introduction to Databases (2nd year)
 - Java programming (1st year)
 - Working in a Digital World (1st year)

Thesis Topics

Doctor of Philosophy

Expanding the Knowledge Acquisition Bottleneck for Intelligent Tutoring Systems

The goal of this research was to automate the production of knowledge bases required for Intelligent Tutoring Systems (ITS). ITSs are educational software that adapt to students by reasoning about their ability. During my research I developed an authoring system that enabled teachers with no programming experience to produce knowledge bases. The system contained a graphical tool for modelling the high-level structure of the domain, and a form-based interface for adding problems and solutions. Its machine learning algorithm analysed the provided information to produce a detailed set of rules for the domain. Evaluations of the authoring system revealed that it was effective for a variety of domains.

Master of Computer Science with Distinction

An Intelligent Teaching System for Database Modelling

This research resulted in a tutoring system designed as a problem solving environment for Entity Relationship (ER) modelling, a popular high-level conceptual database modelling technique. The system presents a description of a scenario for which the students have to model a database model using ER modelling constructs. The attempts made by the students

are evaluated by the system and feedback outlining their errors is presented. The system maintained a long term model of the student's knowledge to select problems that best suited their ability. Evaluations revealed that the system assisted students in enhancing their knowledge of ER modelling.

Bachelor of Computer Science with First Class Honours

Final year research project involved the development and evaluation of an animated pedagogical agent for a web based tutoring system for SQL queries named SQL-Tutor. Evaluation of the animated agent revealed that it contributed towards enhancing learning.

Research Publications

Journal Publications

1. Mitrovic, A., Martin, B. and Suraweera, P. (2007) Intelligent Tutors for all: The Constraint-based Approach, IEEE Intelligent Systems, vol. 22, No.4, pp. 38-45, July 2007
2. Suraweera, P. Mitrovic, *An Intelligent Tutoring System for Entity Relationship Modelling*, Int. J. Artificial Intelligent in Education, vol. 14, no 3-4, 375-417, 2004.
3. Mitrovic, A., Suraweera, P., Martin, B. and Weerasinghe, A. (2004) *DB-suite: Experiences with Three Intelligent, Web-based Database Tutors*. Journal of Interactive Learning Research (JILR), vol. 15, no. 4, pp. 409-432, November 2004

Conference Papers

1. Suraweera, P., Mitrovic, A, Martin, B., *Constraint Authoring System: An Empirical Evaluation* In: R. Luckin, K. Koedinger, J. Greer (Eds.) Proc. Artificial Intelligence in Education 2007, Marina Del Rey, Los Angles, pp. 451-458, 2007
2. Mitrovic, A, Suraweera P., Martin, B., Zakharov K., Milik N. and Holland J., *Authoring Constraint-based Tutors in ASPIRE*. In: M. Ikeda, K. Ashley, and T.-W. Chan (Eds.) Proc. Intelligent Tutoring Systems 2006, Taiwan, pp. 41-50, 2006
3. Suraweera, P., Mitrovic, A. and Martin, B., *A Knowledge Acquisition System for Constraint-based Intelligent Tutoring Systems*. In: C-K Looi, G. McCalla, B. Bredeweg, J. Breuker (Eds.) Proc. Artificial Intelligence in Education 2005, Amsterdam, Netherlands, pp. 638-645, 2005
4. Suraweera, P., Mitrovic, A, Martin, B. *The role of domain ontology in knowledge acquisition for ITSs*. In: J. Lester, R. Vicari, F. Paraguaçu (Eds.) Proc. Intelligent Tutoring Systems 2004, Maceio, Brazil, Springer , pp. 207-216, 2004.
5. Suraweera, P., Mitrovic, A, Martin, B. *The use of ontologies in ITS domain knowledge authoring*. In J. Mostow, P. Tedesco (eds.). Proc. Int. 2nd International Workshop on Applications of Semantic Web for E-learning SWEL'04, ITS 2004, Maceio, Brazil, pp. 41-49, 2004.
6. Suraweera, P.: *Automatic Acquisition of Knowledge for Constraint-based Tutors*. Student Track, Proc. Intelligent Tutoring Systems 2004 (2004)

7. Suraweera, P. and Mitrovic, A., *KERMIT: a Constraint-based Tutor for Database Modelling*. In: S. Cerri, G. Gouarderes and F. Paraguacu (eds.) Proc. Intelligent Tutoring Systems 2002, Biarritz, France, LCNS 2363, 377-387, 2002.
8. Suraweera, P. & Mitrovic, A. *Designing an Intelligent Tutoring System for Database Modelling*. In Smith, M.J. and Salvendy, G. (eds.). Proc. of 9th International Conference on Human-Computer Interaction (HCI 2001), New Orleans, LA, August 2001, vol. 2, pp. 745-749.
9. Suraweera, P. *KERMIT: A Knowledge-based Entity Relationship Modelling Intelligent Tutor*. Proc. New Zealand computer science research students' conference, Christchurch, NZ, 2001
10. Mitrovic, A., Mayo, M., Suraweera, P and Martin, B. *Constraint-based tutors: a success story*. In L. Monostori, J. Vancza and M. Ali (eds). Proc. 14th Int. Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems IEA/AIE-2001, Budapest, June 2001, Springer-Verlag Berlin Heidelberg LNAI 2070, pp. 931-940.
11. Mitrovic, A., Suraweera, P. *Evaluating an Animated Pedagogical Agent*. In G. Gauthier, C. Frasson and K. VanLehn (eds) Proc. Intelligent Tutoring Systems 2000, Montreal, Canada, Springer, pp. 73-82, 2000.

Interests

- Cricket
- Physical Fitness – Running, Gym
- Digital Photography

Personal Details

- Date of Birth 18 August 1978
- Citizenship New Zealand
- Marital Status Married

Referees

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