Brian Tanner

Graduate Student

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Research Interests

Understanding intelligence and making progress towards strong artificial intelligence.
Reinforcement learning, state and temporal abstraction, predictive representations.

Education

Provisional Ph.D Candidate
          September 2005 to Present
University of Alberta, Edmonton, AB, CA

Master of Science
          September 2003 to August 2005
University of Alberta, Edmonton, AB, CA

Bachelor of Computer Science, Honours, Cooperative Option
          September 1998 to May 2003
University of Manitoba, Winnipeg, MB, CA

Honours and Awards (highly competitive awards linked)

2007

Dorothy J Killam Memorial Graduate Prize

Honorary Izaak Walton Killam Memorial Scholarship   (2 years)

2005

Alberta Ingenuity Bill Bridger Award

NSERC Canada Graduate Scholarship (CGS-Doctoral)   (2 years)

Honorary Izaak Walton Killam Memorial Scholarship   (2 years)

Alberta Ingenuity Studentship   (5 years)

iCORE Graduate Student Fellowship   (5 years)

Honorary Walter H. Johns Graduate Fellowship   (2 years)

Province of Alberta Graduate Scholarship

2003

NSERC PGS-A Scholarship for M.Sc.   (2 Years)

iCORE Graduate Student Fellowship   (2 Years)

Adalsteinn Kristjansson Travelling Scholarship	(2 Years)
Walter H. Johns Graduate Fellowship	(2 Years)
Faculty of Science Graduate Scholarship	
University Traveling Fellowship	
Alberta Ingenuity Studentship (Declined)	(5 Years)
University of Manitoba Graduate Fellowship (Declined)	(2 Years)

2002

NSERC Undergraduate Student Research Award (USRA)

Academic Experience

University of Alberta

President of the CSGSA   *May 2004 - April 2005*

Elected to President of the Computing Science Graduate Student's Association. Responsible for faculty relations, student event organization, etc.

Teaching Assistant   *September 2004 - December 2005*

Teaching assistant to Dr. Richard Sutton for undergraduate/graduate class on reinforcement learning. Assisted with design and administration/marking of assignments, etc.

University of Manitoba

Summer Undergraduate NSERC   *May 2003 - August 2003*

Research assistant to Dr. John Anderson studying multi-agent systems, specifically exploring issues of learning and trust in the context of coalition formation in simulated robotic soccer.

Instructor   *September 2002 - May 2003*

Taught undergraduate level course *Introduction to Computer Usage* to approximately 150 first year University students in each of the fall and spring terms. Provided all lectures, shared responsibility for exams, homework assignments, and grades.

Teaching Assistant   *September 2001 - May 2002*

Duties at various times have included office hours and leading weekly computer lab exercises.

Committees & Refereeing

 Program Committee member/referee:

2005-2006 International Joint Conference on Autonomous Agents and Multi-agent Systems

2006 Journal of Intelligent Systems

Publications

Brian Tanner, Vadim Bulitko, Anna Koop, and Cosmin Paduraru. Grounding Abstractions in Predictive State Representations. Twentieth International Joint Conference on Artificial Intelligence. January 2007.

Brian Tanner and Richard Sutton. Predictive Action Descriptions from Experience. 16th International Conference on Inductive Logic Programming. Short paper. August 2006.

Brian Tanner and Richard Sutton. Temporal Difference Networks with Eligibility Traces. International Conference on Machine Learning 2005.

Brian Tanner and Richard Sutton. Temporal Difference Networks with History. In Proceedings of the Nineteenth International Joint Conference on Artificial Intelligence.

Eddie Rafols, Mark Ring, Richard Sutton, **Brian Tanner**. Using Predictive Representations for Generalization in Reinforcement Learning. In Proceedings of the Nineteenth International Joint Conference on Artificial Intelligence.

Robert C. Holte, Jeffery Grajkowski, **Brian Tanner**. Extended Abstract - Hierarchical Search Revisited. Symposium on Abstraction, Reformulation and Approximation (SARA) 2005.

Richard Sutton and **Brian Tanner**. Temporal Difference Networks. In Proceedings of the NIPS Neural Information Processing Systems Conference 2005.

John Anderson, **Brian Tanner**, and Jacky Baltes. Dynamic coalition formation in robotic soccer. In Proceedings of the AAAI-04 Workshop on Forming and Maintaining Coalitions and Teams in Adaptive Multiagent Systems.

John Anderson, **Brian Tanner**, and Jacky Baltes. Reinforcement Learning from Teammates of Varying Skill in Robotic Soccer. In Proceedings of the 2004 FIRA Federation of International Robotic-soccer Association World Congress.

John Anderson, **Brian Tanner**, and Ryan Wegner. Peer reinforcement in homogeneous and heterogeneous multi-agent learning. In Proceedings of the IASTED International Conference on Artificial Intelligence and Soft Computing 2002.

John Anderson, Ryan Wegner, and **Brian Tanner**. Exploiting opportunities through dynamic coalitions in robotic soccer. In Proceedings of the AAAI International Workshop on Coalition Formation in Dynamic Multiagent Environments.