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# Curriculum Vitae

## Jesse Hoey

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**November 19, 2009**

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### Research Statement

My long-term research goal is to develop technologies that will increase the efficiency of healthcare delivery and maintenance. The ratio of healthcare professionals to care recipients is dropping at an alarming rate, particularly for the older population. Further, patients are becoming more aware and involved in their own health care decisions. This is creating a void in which technology has an increasingly important role to play as a tool to connect providers with recipients. Examples range from telecare for remote regions to computer games promoting fitness in the home. Currently, such technologies are developed for specific applications, and are difficult to modify to suit individual user needs. The future potential economic and social impact of technology in the health care field therefore lies in our ability to make devices that are customizable by healthcare professionals and their clients, that are adaptive to users over time, and that generalize across tasks and environments. My research addresses these three requirements, thereby increasing uptake by users and long-term efficiency and robustness of healthcare technology.

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### Education

<b>Ph.D. Computer Science</b> , University of British Columbia, Vancouver, Canada	<b>1997-2004</b>
<b>M.Sc. Physics/Oceanography</b> , University of British Columbia, Vancouver, Canada	<b>1992-1994</b>
<b>B.Sc. Physics</b> (Honours), McGill University, Montreal, Canada	<b>1989-1992</b>

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### Positions Currently Held

<b>Lecturer (Assistant Professor), School of Computing, University of Dundee</b>	<b>2006-</b>
<b>Adjunct Scientist, Toronto Rehabilitation Institute, Toronto</b>	<b>2006-</b>

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### Most Significant Esteem Indicators

Microsoft/AAAI <b>Distinguished Contribution Award</b> IJCAI 2009 Workshop on Intelligent Systems for Assisted Cognition	<b>2009</b>
<b>Highly accessed</b> rating and <b>6<sup>th</sup> most viewed paper in last year</b> in BMC Geriatrics Journal For the paper: <i>The COACH prompting system to assist older adults with dementia through handwashing: An efficacy study.</i>	<b>2009</b>
International Association for Pattern Recognition (IAPR) <b>Best Paper Award</b> For the paper: <i>Assisting Persons with Dementia during Handwashing Using a Partially Observable Markov Decision Process</i> at the International Conference on Vision Systems, Bielefeld, Germany.	<b>2007</b>

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## Research Grants

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### Principal Investigator/Co-Investigator (Current)

- EU-Mexico/Conacyt Foncyt Research Grant **08/2009-07/2011**  
Principal Investigator: *DyNaMo -Dynamic Probabilistic Graphical Models and their Applications*  
amount: \$1,160,000 USD (total), \$167,366 USD (Dundee)
- American Alzheimer's Association *Everyday Technologies for Alzheimer's Care* **01/2008-12/2010**  
Principal Investigator: *Development of an Automated System to Facilitate Creative Expression.*  
amount: \$199,650 USD
- American Alzheimer's Association *Everyday Technologies for Alzheimer's Care* **01/2009-12/2011**  
co-Investigator: *Towards a pervasive prompting system: Improving and expanding the COACH.*  
amount: \$196,324 USD
- UK Engineering and Physical Sciences Research Council (EPSRC) Research Grant **10/2009-09/2012**  
co-Investigator: *Scaling up Statistical Spoken Dialogue Systems*  
amount: £313,013 (total), £14,097 (Dundee)

### Named Collaborator (Current)

- UK Engineering and Physical Sciences Research Council (EPSRC) Research Grant **10/2009-09/2012**  
name collaborator: *Inclusion Through the Digital Economy Hub*  
Paul Watson (PI), Vicki Hanson (PI)  
amount: £14,405,660 (total), £53,651 (Dundee)
- Canadian Institutes for Health Research (CIHR) **05/2009-04/2012**  
named collaborator: *Robotics for Stroke Rehabilitation*  
Alex Mihailidis (PI), Craig Boutilier, William McIlroy  
Industrial Partner: Quanser, Inc  
amount: \$316,600 CDN
- Deutsche Forschungsgemeinschaft (German Research Foundation or DFG) **09/2008-08/2010**  
named collaborator: Cognitive Interaction Technology Center of Excellence (CITEC),  
Bielefeld University, Germany.
- Canadian Institutes for Health Research (CIHR) and EPSRC New Dynamics of Ageing (NDA) Supplemental Funding Program **06/2009-05/2011**  
named collaborator: *The application of the COACH prompting system to nutrition among older adults*  
Alex Mihailidis (PI), Elizabeth Rochon  
amount: \$222,000 CDN
- Canadian Institutes for Health Research (CIHR) Operating Grant **06/2009-05/2011**  
named collaborator: *Towards the development of a pervasive prompting system for older adults with dementia: Developing the COACH task guidance system for use in the home*  
Alex Mihailidis (PI), Craig Boutilier, Jill Cameron, Geoff Fernie, Gary Naglie  
amount: \$312,000 CDN

### Past Grants

- Canadian Institute for Health Research **02/2006-02/2007**  
co-Investigator: *Development and validation of an automated tool for detecting and preventing unsafe stair use by older adults*  
amount: \$48,227 CDN
- Canadian-UK Partnerships Travel Grant **06/2008**  
amount: £819.00
- Precarn-CITO (Communications and Information Technology Ontario) **05/2006-04/2007**  
co-Investigator: *Intelligent Haptic Stroke Rehabilitation*  
amount: \$599,990 CDN

- Nissan Motor Corp., Japan – UBC Computer Science Partnership Grant  
co-Investigator: *Analysis of driver behavior with computer vision*  
amount: \$95,275 CDN

05/2001-05/2002

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## Previous Research Experience

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- Postdoctoral Fellow, Department of Computer Science and Department of Occupational Therapy and (cross-appointed), University of Toronto** **2004-2006**  
Member: Intelligent Assistive Technology and Systems Laboratory (IATSL).  
Supervisors: Prof. Craig Boutilier and Dr. Alex Mihailidis.
- Research Assistant, Department of Computer Science, University of British Columbia** **2000-2004**  
Member: Laboratory for Computational Intelligence (LCI).  
Supervisor: Dr. James J. Little.
- Research Associate, *Computer Vision Driver Analysis* project** **2002-2003**  
Nissan Motor Corp. – UBC partnership.  
Project supervised by Prof. James J. Little, Dr. Nando de Freitas and Dr. Ron Rensink

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## Teaching Experience

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- Instructor, School of Computing, University of Dundee** **2006-2009**
- 2006-2009 MSc in Intelligent Computational Systems (ICS). Prepared and delivered a substantial portion of the new MSc program. Designed, wrote and coordinated three new modules. Took an active role in the exam boards, and in the course reviews, implementing modifications to courses to increase synergy with other programs at the University. Liaised with the external examiner. Received excellent results in internal reviews, external reviews and student evaluations.
    - 2006-2008: module coordinator, AC51022 (Logical and Symbolic Artificial Intelligence) and AC51024 (Signals and Images). Developed new module. Prepared and delivered 30 hours of lectures and 30 hours of laboratories. Supervised teaching assistant for lab work. Prepared module assignments, exams, sample exams, and solutions. Marked all exam scripts. Maintained module website. Submitted reports and discussed module to internal and external review.
    - 2007-2009: module coordinator, AC52021 (Vision and Perception). Developed new module. Introduced a novel teaching method involving student participation and topical discussion. Prepared 12 hours of lectures and 30 hours of laboratories. Coordinated work of two other lecturers. Prepared module assignments, exams, sample exams, and solutions. Marked exam scripts. Maintained module website. Submitted reports and discussed module to internal and external review.
    - 2007-2009: module coordinator, AC52031 (MSc project). Implemented a structure for the project, gathered and assigned project proposals from staff, marked project reports, developed a grading scheme, participated in internal and external course and examination reviews.
    - 2007-2009: lecturer, AC52023 (Research Methods and Applications). Presented 6 hours lectures. Invited speakers to present and led discussions. Wrote and marked exam questions.
  - 2008: lecturer on BSc in Applied Computing AC2202 (Information Technology II). 70 students. 4 hours lectures per week plus 4 hours lab sessions. Lectured on internet authoring, HTML, CSS and ASP.NET. Prepared and marked exams. Received excellent student evaluations.
  - 2008, 2009: lecturer on BSc in Applied Computing AC1002 (Information Technology I). 60 students. 4 hours lectures per week plus 4 hours lab sessions. Lectured on artificial intelligence. Prepared and marked exams. Received excellent student evaluations.
  - 2007, 2008, 2009: project supervisor, BSc in Applied Computing (Honours) final year project. Supervised 1-2 students each year. Minimum 1 hour per week contact.

**Instructor, Department of Computer Science, UBC** **2001, 2002**  
Taught two terms of UBC's introductory C++ programming course. Composed and marked quizzes, midterms and final examinations. Supervised six teaching assistants. Organized laboratories and tutorials. Developed online notes and course website. Received excellent student evaluations.

**Teaching Assistant, Department of Computer Science, UBC** **1997-2001**

**Teaching Assistant, Department of Physics, UBC** **1992-1994**

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## Training and Supervision

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### Research Personnel Trained

- Krists Zutis, School of Computing, University of Dundee **05/2009-present**  
Research Assistant: *American Alzheimer's Assoc.* Project
- Scott Blunsden, School of Computing, University of Dundee **06/2008-03/2009**  
Postdoctoral Research Assistant: *American Alzheimer's Assoc.* Project
- Christian Peters, School of Computing, University of Dundee **06/2008-07/2008**  
Visiting Student supervisor
- Axel von Bertoldi, Dept. of Occupational Therapy, University of Toronto **05/2006-05/2007**  
Research Assistant. *Design and Development of a real-time system for assisting persons with dementia during handwashing*
- Dan Gunn, Sunnybrook & Women's Health Center **05/2005-09/2005**  
Research Assistant. *The development of an intelligent anti-collision system for a powered wheelchair.*
- Jasper Snoek, Dept. of Computer Science, University of Toronto **02/2006-02/2007**  
Research Assistant. *The development of an automated tool for detecting unsafe stair use by older adults.*
- Chris Riddle, Dept. of Occupational Therapy, University of Toronto **04/2005-06/2005**  
Research Assistant. *Clinical testing of an automated prompting system for handwashing.*

### Research Students Supervised

- Philippa Riley, School of Computing, University of Dundee **10/2009**  
Internal PhD Viva examiner
- Krists Zutis, School of Computing, University of Dundee **09/2008-05/2009**  
Honours research student supervisor
- Christian Peters, Applied Informatics, Bielefeld University **10/2008**  
Diplom. Thesis co-advisor and external examiner
- Matthias Seise, School of Computing, University of Dundee **14/04/2008**  
Internal PhD Viva examiner
- Iqbal Siddiqui, School of Computing, University of Dundee **05/2007-09/2007**  
MSc student supervisor
- Jasper Snoek, Dept. of Computer Science, University of Toronto **09/2005-02/2007**  
MSc student co-supervisor

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## Professional Activities

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Conference Co-Chair, British Machine Vision Conference (BMVC) 2011, Dundee, UK.

Conference Co-Chair, Medical Image Understanding and Analysis (MIUA) 2008, Dundee, UK.

Member, American Alzheimer's Association *Working Group on Technology* (2006-Present)

Organising Committee, AAAI Fall Symposium on AI in Eldercare 2008, Washington, USA.

Member, IEEE Robot Learning Technical Committee, 2008-present.

Grant Reviewer: American Alzheimer's Association, NSERC, Chief Scientist Office (Scotland).

Reviewer for major computer science journals: Universal Access in the Information Society 2009, Autonomous Robots 2009, IEEE Transactions on Automatic Control 2008, Artificial Intelligence Journal (AIJ) 2008, Systems, Man & Cybernetics B (2007), Journal of Artificial Intelligence Research (JAIR) 2006,2007, IEEE Transactions on Information Technology in Biomedicine 2007; IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI) 2004,2005, 2008; Computer Vision and Image Understanding Journal 2004, 2006, 2008, 2009; and Image and Vision Computing 2004.

Reviewer for major international conferences in computer vision, computer graphics and artificial intelligence: AI-STATS 2009, Medical Image Understanding and Analysis (MIUA) 2008, ICVS 2008, International Conference on Pervasive Computing 2007, International Joint Conference on Artificial Intelligence (IJCAI) 2005, 2007, 2009; Uncertainty in Artificial Intelligence (UAI) 2005,2006,2007,2008; Neural Information Processing Systems (NIPS) 2007,2008,2009; Robotics Science and Systems (RSS) 2005; Mexican Conference on Artificial Intelligence (MICAI) 2005,2006,2007,2008; Graphics Interface (GI) 2004; IEEE International Conference on Computer Vision (CVPR) 2001,2003,2005,2009; International Conference on Pattern Recognition (ICPR) 2001; European Conference on Computer Vision (ECCV) 2002; EuroGraphics 2002; German Conference on Artificial Intelligence (KI) 2002.

Currently maintain the SPUDD website and the SPUDD code, providing a fast and free online MDP solver to the research community.

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## Awards and Citations

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- Highly accessed** rating assigned by BMC Geriatrics **2009**  
For the paper : Alex Mihailidis, Jennifer N. Boger, Tammy Craig, and **Jesse Hoey**. The COACH prompting system to assist older adults with dementia through handwashing: An efficacy study. *BMC Geriatrics*, 8 (28), 2008.
- BMC Geriatrics 6<sup>th</sup> **most viewed paper in the last year** **2009**  
For the paper : Alex Mihailidis, Jennifer N. Boger, Tammy Craig, and **Jesse Hoey**. The COACH prompting system to assist older adults with dementia through handwashing: An efficacy study. *BMC Geriatrics*, 8 (28), 2008.
- Microsoft/AAAI **Distinguished Contribution Award** **2009**  
at IJCAI 2009 Workshop on Intelligent Systems for Assisted Cognition (\$2,500 USD Prize)
- The COACH - Named "**Solution of the Year**" 2007 by Advanced Imaging Magazine. **2008**
- The COACH - Named **top 20** Science & Medicine Stories of the Year 2007 - The Toronto Star. **2008**
- International Association for Pattern Recognition (IAPR) **Best Paper Award** **2007**  
For the paper *Assisting Persons with Dementia during Handwashing Using a Partially Observable Markov Decision Process* at the International Conference on Vision Systems, Bielefeld, Germany, (€500 cash prize).
- Canesta<sup>TM</sup> Vision Contest **Grand Prize Winner** **2005**  
Innovative Application of Canesta's electronic perception technology, *Wheelchair collision obstacle avoidance* (\$10,500 USD cash prize).
- Canesta<sup>TM</sup> Vision Contest **Winner** (Phase One) **2005**  
Innovative Application of Canesta's electronic perception technology, *Wheelchair collision avoidance using 3D sensors* (\$7,500 USD In-kind prize).

<b>First place</b> , 2001 <i>Hors D'œuvres Anyone?</i> Mobile Robot Competition. Seattle, WA, August, 2001.	<b>2001</b>
<b>Teaching Assistant Award</b> , Department Computer Science, UBC.	<b>1998,1999,2000</b>
<b>Horace Watson Medal</b> . McGill University, Montreal, Canada. Awarded for highest academic standing in Honours Physics.	<b>1992</b>

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## Publications

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### Volumes Edited

- Stephen McKenna and **Jesse Hoey**, editors. Annals of the British Machine Vision Association Special Issue on MIUA 2008. Vol 2009, Issues 1-8. A collection of the best papers from MIUA 2008.
- Stephen McKenna and **Jesse Hoey**, editors. Proceedings of the Twelfth Annual Conference on Medical Image Understanding and Analysis (MIUA) 2008. Published by the British Machine Vision Association (BMVA). ISBN 1901725359.

### Journal Articles

- **Jesse Hoey**, Pascal Poupart, Axel von Bertoldi, Tammy Craig, Craig Boutilier, and Alex Mihailidis. Automated Handwashing Assistance for Persons with Dementia Using Video and a Partially Observable Markov Decision Process. *Computer Vision and Image Understanding (CVIU)*, In Press, 2009. (primary author)
- Alex Mihailidis, Jennifer N. Boger, Tammy Craig, and **Jesse Hoey**. The COACH prompting system to assist older adults with dementia through handwashing: An efficacy study. *BMC Geriatrics*, 8 (28), 2008. (senior author)
- Jasper Snoek, **Jesse Hoey**, Liam Stewart, and Richard Zemel. Automated Detection of Unusual Events on Stairs. *Image and Vision Computing (IMAVIS)* 27 (1-2), Jan. 2009. (contributing author)
- Alex Mihailidis, Jen Boger, Marcelle Candido, and **Jesse Hoey**. The use of an intelligent prompting system for people with dementia. *ACM Interactions*, 14 (4), pp.34-37, ACM Press, July+August 2007. (senior author)
- **Jesse Hoey** and James J. Little. Value-Directed Human Behavior Analysis with Partially Observable Markov Decision Processes. *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 29 (7), pp.1118-1132, 2007. (primary author)
- Alex Mihailidis, Pantelis Elinas, Jen Boger, and **Jesse Hoey**. An Intelligent Powered Wheelchair to Enable Mobility of Cognitively Impaired Older Adults: an Anticollision System. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 15 (1) (2007), pp.136-143. (senior author)
- Jen Boger, **Jesse Hoey**, Pascal Poupart, Craig Boutilier, Geoff Fernie, and Alex Mihailidis. A planning system based on Markov decision processes to guide people with dementia through activities of daily living. *IEEE Transactions on Information Technology in Biomedecine*, 10 (2), 323-333, 2006. (contributing author)

### Peer-Reviewed Conference Articles

- Kristis Zutis and **Jesse Hoey**. Who's Counting?: Real-Time Blackjack Monitoring for Card Counting Detection. In *Proc. of Intl. Conference on Vision Systems (ICVS)*, Liege, Belgium, October 2009. (senior author, acceptance rate: 45/120=37%)
- **Jesse Hoey**, Axel von Bertoldi, Pascal Poupart and Alex Mihailidis. Assisting Persons with Dementia during Handwashing Using a Partially Observable Markov Decision Process In *Proc. of International Conference on Vision Systems (ICVS)*, Bielefeld, Germany, March 2007. (primary author. acceptance rate: 64/127 = 50% total, 26/127 = 20% oral, and **winner of the best paper award**: 1/127 = 0.8%)

- **Jesse Hoey** Tracking using Flocks of Features, with. Application to Assisted Handwashing. In *Proc. of British Machine Vision Conference*, Edinburgh, Scotland, September 2006 (primary author. acceptance rate: 127/420=30%)
- Jasper Snoek, **Jesse Hoey**, Liam Stewart and Richard Zemel. Automated Detection of Unusual Events on Stairs. in *Proc. of 3<sup>rd</sup> Conference on Computer and Robot Vision*, Quebec, June 2006 (contributing author. acceptance rate: 47/89=53% total, 23/89=26% oral)
- Pascal Poupart, Nikos Vlassis, **Jesse Hoey**, and Kevin Regan. An Analytic Solution to Discrete Bayesian Reinforcement Learning. In *Proceedings of the 23<sup>rd</sup> International Conference on Machine Learning (ICML)*, pages 697-704, Pittsburgh, Pennsylvania, USA, 2006. (contributing author. acceptance rate: 140/700 = 20%)
- **Jesse Hoey** and Pascal Poupart. Solving POMDPs with Continuous or Large Discrete Observation Spaces. In *Proc. of Intl. Joint Conference on Artificial Intelligence (IJCAI)*, Edinburgh, July 2005. (primary author. acceptance rate 240/1330 =18% oral)
- Jen Boger, Pascal Poupart, **Jesse Hoey**, Craig Boutilier, Geoff Fernie, and Alex Mihailidis. A Decision-Theoretic Approach to Task Assistance for Persons with Dementia. In *Proc. of Intl. Joint Conference on Artificial Intelligence (IJCAI)*, Edinburgh, Scotland, July 2005. (contributing author. acceptance rate 240/1330 =18% oral)
- **Jesse Hoey** and James J. Little. Value Directed Learning of Facial Displays. In *Proc of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Washington, DC, June 2004. (primary author. acceptance rate: 206/870=30% total, 54/870=6% oral)
- **Jesse Hoey** and James J. Little. Decision Theoretic Modeling of Human Facial Displays. In *Proc. of 8<sup>th</sup> European Conference on Computer Vision (ECCV)*, Prague, CZ, May 2004. (primary author. acceptance rate: 190/555=34% total, 41/555=7% oral)
- **Jesse Hoey** and James J. Little. Bayesian Clustering of Optical Flow Fields. In *Proc. of Intl. Conference on Computer Vision (ICCV)*, Nice, France, October 2003. (primary author. acceptance rate: 199/971=21% total)
- **Jesse Hoey**. Clustering Contextual Facial Display Sequences. In *Proc. of Intl. Conference on Automatic Face and Gesture Recognition (FG)*, Washington, DC, May 2002. (primary author. acceptance rate: 30%)
- Pantelis Elinas, **Jesse Hoey**, Darrell Lahey, Jeff Montgomery, Don Murray, Stephen Se, and James J. Little. Waiting with Jose, a vision based mobile robot. In *Proc. Intl. Conference on Robotics and Automation (ICRA)* Washington, DC, May 2002. (contributing author. acceptance rate 689/1168=59%)
- **Jesse Hoey** and James J. Little. Representation and recognition of complex human motion. In *Proc. of Intl. Conference on Computer Vision and Pattern Recognition (CVPR)*, Hilton Head, SC, June 2000. (primary author. acceptance rate: 220/464=47% total)
- Robert St-Aubin, **Jesse Hoey**, and Craig Boutilier. APRICODD: Approximate policy construction using decision diagrams. In *Proc. Neural Information Processing Systems (NIPS) 14*, 2000. (primary author. acceptance rate  $\approx$  30%)
- **Jesse Hoey**, Robert St-Aubin, Alan Hu, and Craig Boutilier. (primary author, 50% effort. acceptance rate=30%) SPUDD: Stochastic planning using decision diagrams. In *Proc. of Uncertainty in Artificial Intelligence (UAI)*, Stockholm, Sweden, 1999. (primary author. acceptance rate=77/151=51%)

#### Peer-Reviewed Workshops and Posters

- Scott Blunsden, Brandi Richards, Dan Jackson, Tom Bartindale, Jen Boger, Alex Mihailidis and **Jesse Hoey**. Design and Prototype of a Device to Engage Cognitively Disabled Older Adults in Visual Artwork. In *Proceedings of the ACM 2nd International Conference on PErvasive Technologies Related to Assistive Environments (PETRA)*, Corfu, Greece, June 2009. (senior author)

- Patrick Olivier, Andrew Monk, Guangyou Xu and **Jesse Hoey**. Ambient Kitchen: designing situated services using a high fidelity prototyping environment. In *Proceedings of the ACM 2nd International Conference on Pervasive Technologies Related to Assistive Environments (PETRA)*, Corfu, Greece, June 2009. (contributing author)
- **Jesse Hoey**, Brandi Richards, Scott Blunsden, Jane Burns, Dan Jackson, Tom Bartindale, Patrick Olivier, Jen Boger and Alex Mihailidis. ePAD: Engaging Platform for Art Development. *IJCAI workshop on Intelligent Systems for Assisted Cognition*, Pasadena, California, 2009. (primary author)
- Christian Peters, Sven Wachsmuth, and **Jesse Hoey**. Learning to recognise behaviours of persons with dementia using multiple cues in an HMM-based approach. In *Proceedings of the ACM 2nd International Conference on Pervasive Technologies Related to Assistive Environments (PETRA)*, Corfu, Greece, June 2009. (senior author)
- Patricia Kan, **Jesse Hoey** and Alex Mihailidis. Automated upper extremity rehabilitation for stroke patients using a partially observable Markov decision process. *AAAI 2008 Fall Symposium on AI in Eldercare: New Solutions to Old Problems*. Arlington, VA, 2008. (contributing author)
- **Jesse Hoey**, Daniel Gunn, Alex Mihailidis, and Pantelis Elinas. Obstacle Avoidance Wheelchair System. In *Proc. International Conference on Robotics and Automation (ICRA) Poster Session*, Orlando, FL, May 2006. (primary author)
- **Jesse Hoey**, Pascal Poupart, Craig Boutilier and Alex Mihailidis. Semi-Supervised Learning of a POMDP model of Patient-Caregiver Interactions. In *Proc. IJCAI Workshop on Modeling others from Observations (MOO)*, Edinburgh, Scotland, July 2005 (primary author)
- **Jesse Hoey**, Pascal Poupart, Craig Boutilier, and Alex Mihailidis. POMDP models for Assistive Technology. In *Proc. AAI Fall Symp. on Caring Machines: AI in Eldercare*, Washington DC, Nov. 2005. (primary author)
- Pantelis Elinas, Enrique Sucar, Alberto Reyes, and **Jesse Hoey**. A Decision Theoretic Approach for Task Coordination in Social Robots. In *Proc. of Intl. Workshop on Robot and Human Interactive Communication*. Kurashiki, Okayama Japan, September 2004. (contributing author)
- **Jesse Hoey**. Decision Theoretic Learning of Facial Displays. In *NIPS Workshop on Challenges in Cognitive Vision*, Whistler, BC, December 2003. (primary author)
- Pantelis Elinas, **Jesse Hoey**, and James J. Little. HOMER: Human Oriented MEssenger Robot. (primary author) In *Proc. of AAI Spring Symposium on Human Interaction with Autonomous Systems in Complex Environments*, Stanford, CA, March 2003. (contributing author)
- **Jesse Hoey**. Hierarchical unsupervised learning of facial expression categories. In *Proc. Workshop on detection and recognition of events in video*, Vancouver, BC, July 2001. (primary author)

## Theses

- **Jesse Hoey**. *Decision Theoretic Learning of Facial Displays*. Ph.D. Thesis. University of British Columbia, Vancouver, Canada, May 2004
- **Jesse Hoey**. *On the use of an acoustic Doppler current profiler to study zooplankton biomass distributions on the Vancouver Island continental margin*. M.Sc. Thesis. University of British Columbia, Vancouver, Canada, May 1995.

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## Patents

*Automated emergency detection and response*, US Provisional Patent 61,071,939, May 27, 2008.  
 Alex Mihailidis, **Jesse Hoey**, Jen Boger, David Giesbrecht, JP Lobos, and Tracy Lee  
 Full Patent Application in submission

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## Recent Invited Talks

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Art Therapy and Hand Washing: Computer Vision in the Wild Invited Talk, SICSA Workshop on Whole-Body Interaction, Glasgow, Scotland	<b>05/11/2009</b>
Computer Vision for Health and Wellbeing Invited Lecture, Summercourse on Technology in Care, Leusden, Netherlands	<b>26/08/2009</b>
Devices for Engaging Persons with Dementia in Creative Arts Therapies. Invited talk, University of Waterloo, School of Computer Science Seminar, Waterloo, Canada	<b>03/04/2009</b>
Ubiquitous Cognitive Assistive Technologies: The Talking Sink and Other Devices. Invited talk, MICA 2008 Workshop on Social Care Robots, ITESM, Mexico City, Mexico.	<b>27/10/2008</b>
Real-time automated handwashing assistance for persons with dementia. Invited Talk, INAOE, Puebla, Mexico.	<b>24/10/2008</b>
Ubiquitous Cognitive Assistive Technologies: The Talking Sink and Other Devices ICCS/HCRC Seminar, University of Edinburgh, Scotland.	<b>17/10/2008</b>
Ubiquitous Cognitive Assistive Technologies: The Talking Sink and Other Devices Invited Talk, University of British Columbia, Vancouver, Canada.	<b>03/10/2008</b>
Automated Assistive Technology for Elder Care: The Talking Sink and Other Devices Smart Environments BMVA Symposium, London, England	<b>06/06/2008</b>
“The Talking Sink”: Automated Assistance for Persons with Dementia. Computer Science Department Colloquium, Newcastle University, Newcastle, UK.	<b>25/03/2008</b>
How to Build a Mind DCA Dialogue Presentation. Dundee Contemporary Arts Center, Dundee UK.	<b>20/02/2008</b>
“The Talking Sink”: Automated Assistance for Persons with Dementia. Invited Talk, Collaborative Research Center, Bielefeld University, Germany.	<b>30/01/2008</b>
Ubiquitous Automated Cognitive Assistive Technologies: Are We Close? Invited Talk, IBM Research, Hawthorne, NY, USA.	<b>30/11/2007</b>
Assisting persons with dementia during handwashing using a POMDP Invited talk, IAM Group, University of Southampton, Southampton, UK.	<b>30/04/2007</b>
POMDPs for Human Interactive Tasks Invited talk, Palo Alto Research Center (PARC), Palo Alto, California, USA.	<b>09/01/2006</b>

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## Citizenship

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Canadian

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## Languages

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Completely fluent in written and spoken English and French. Basic spoken Spanish.

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## References

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**Dr. Alex Mihailidis**

Department of Occupational Science and Occupational Therapy  
University of Toronto  
Toronto, Canada  
email: alex.mihailidis@utoronto.ca  
phone: +1.416.946.8565

**Prof. Stephen J. McKenna**

School of Computing  
University of Dundee  
Dundee, Scotland  
email: stephen@computing.dundee.ac.uk  
phone: +44.1382.384.732

**Prof. Craig Boutilier**

Department of Computer Science  
University of Toronto  
Toronto, Canada  
email: cebly@cs.toronto.edu  
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**Dr. Sven Wachsmuth**

Applied Computer Science  
Bielefeld University  
D-33501 Bielefeld, GERMANY  
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**Prof. James J. Little**

Department of Computer Science  
University of British Columbia  
Vancouver, Canada  
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phone: +1.604.822.4830