

## Education

- 2010 **Brown University**, Ph.D. in Computer Science. Dissertation title: *Teaching Old Dogs New Tricks: Incremental Multimap Regression for Robot Learning from Demonstration*.  
Committee members: O.C. Jenkins (Chair), T. Dean, M. Veloso, and D. Lee.
- 2005 **Brown University**, Sc.M in Computer Science. Project title: *Discovering natural kinds of robot sensory experiences in unstructured environments*.  
Advisor: O.C. Jenkins
- 2003 **Yale University**, B.S. in Electrical Engineering and Computer Science. Senior Project: *Glwys, the robotic rat*.  
Advisor: B. Scassellati.

## Employment

- Sep '09 - Present **Ecole Polytechnique Federale de Lausanne**, Post-Doc, Supervisor: A. Billard  
Researched and developed machine learning techniques for Robot Learning from (Failed) Demonstrations.
- Jun '05 - Sep '05 **Fraunhofer-IPSI**, Ambiente Researcher, Supervisor: C. Magerkurth  
Implemented hardware interfaces and designed a description language for hybrid physical-virtual games.
- Jun '04 - Aug '04 **iRobot Research**, Software Engineer, Supervisor: Dr. B. Yamauchi  
Wrote drivers and libraries interfacing with multiple sensors for an autonomous robot project.
- Jun '03 - Aug '03 **Microsoft**, Software Design Engineer, Supervisor: G. Cermak  
Developed peer-to-peer capabilities for Smart Personal Object Technologies as well as demonstration games.
- Jun '02 - Aug '02 **Microsoft Hardware**, Firmware Engineer, Supervisor: M. Hanson  
Worked in assembly to improve the firmware in wireless mouse receivers.
- Sep '01 - May '03 **Dept. of Computer Science (Yale)**, Robotics Researcher, Supervisor: Dr. B. Scassellati  
Aided in the conceptualization, design, and development of the Nico humanoid robot platform.
- May '01 - Aug '01 **Division of Informatics (Edinburgh)**, Researcher, Supervisor: Dr. G. Hayes  
Utilized extant projects to implement a gesture-guided robot system; Refurbished an older system for future use.
- May '00 - Jan '01 **Computer Science (Yale)**, Research and Design, Supervisors: Drs. P. Hudak, J. Peterson, and D. McDermott  
Coded autonomous robots with Functional Reactive Programming (Haskell FRP) for Robocup '99.

## Publications

### PHD THESIS

Daniel H Grollman. *Teaching Old Dogs New Tricks: Incremental Multimap Regression for Interactive Robot Learning from Demonstration*. PhD thesis, Brown University, May 2010.

### BOOK CHAPTERS

Daniel Grollman and Aude Billard. *Encyclopedia of the Sciences of Learning*, Chapter: Learning Algorithms. Springer, 2011.

Aude Billard and Daniel Grollman. *Encyclopedia of the Sciences of Learning*, Chapter: Imitation Learning (of robots). Springer, 2011.

Aude Billard and Daniel Grollman. *Encyclopedia of the Sciences of Learning*, Chapter: Human-Robot Interaction. Springer, 2011.

Daniel H Grollman and Odest Chadwicke Jenkins. *From Motor to Interaction Learning in Robots*, Chapter: Can We Learn Finite State Machine Robot Controllers from Interactive Demonstration? Springer, 2009.

### JOURNAL ARTICLES

Daniel H. Grollman, Odest Chadwicke Jenkins, and Frank Wood. Discovering natural kinds of robot sensory experiences in unstructured environments. *Journal of Field Robotics*, 23(11-12):1077–1089, November–December 2006.

### CONFERENCE PROCEEDINGS

Daniel H Grollman and Aude Billard. Donut as I do: Learning from failed demonstrations. In *International Conference on Robotics and Automation*, Shanghai, May 2011. **Winner: Best Cognitive Robotics Paper.**

Daniel H Grollman and Aude G Billard. Learning from failure [extended abstract]. In *International Conference on Human-Robot Interaction: Late Breaking Reports*, Lausanne, Switzerland, March 2011.

Daniel H Grollman and Odest Chadwicke Jenkins. Incremental learning of subtasks from unsegmented demonstration. In *International Conference on Intelligent Robots and Systems*, Taipei, Taiwan, October 2010.

Daniel H Grollman and Odest Chadwicke Jenkins. Sparse incremental learning for interactive robot control policy estimation. In *International Conference on Robotics and Automation*, pages 3315–3320, Pasadena, CA, USA, May 2008.

Daniel H Grollman and Odest Chadwicke Jenkins. Learning robot soccer skills from demonstration. In *International Conference on Development and Learning*, pages 276–281, London, UK, July 2007.

Daniel H Grollman and Odest Chadwicke Jenkins. Dogged learning for robots. In *International Conference on Robotics and Automation*, pages 2483 – 2488, Rome, Italy, April 2007.

Carsten Magerkurth, Timo Engelke, and Dan Grollman. A component based architecture for distributed, pervasive gaming applications. In *ACM SIGCHI International Conference on Advances in Computer Entertainment Technology*, Hollywood, CA, USA, June 2006.

David Eigen, Daniel Grollman, David Laidlaw, Benjamin Greenberg, and Erin Einbinder. Visualizing deep brain stimulation settings in obsessive compulsive disorder. In *ACM SIGGRAPH International Conference on Computer Graphics and Interactive Techniques*, Los Angeles, California, August 2004.

#### VIDEOS / DEMOS

Rgame: Embodied gaming for robot learning by demonstration. IJCAI 2009 Robot Challenge - LbD, July 2009.

Rgame: Robotic gaming. ICRA 2009 Robot Challenge - HRI, May 2009.

Daniel Byers, Micah Lapping-Carr, Julie Kumar, Theodora Hinkle, Daniel Grollman, and Odest Chadwicke Jenkins. HRI caught on film 2. In Christoph Bartneck, editor, *ACM/IEEE International Conference on Human Robot Interaction*, Amsterdam, The Netherlands, 2008.

Daniel Byers, Michael Lapping-Carr, Julie Kumar, Thea Hinkle, Dan Grollman, and Chad Jenkins. Game-based learning. AAI2008 Video Competition, July 2008. **Winner: Best Student Video.**

#### WORKSHOPS / SYMPOSIA

Daniel H Grollman and Aude G Billard. Imitation and reinforcement learning from failed demonstrations. In *ICML workshop on New Developments in Imitation Learning*, Bellevue, WA, June 2011.

Daniel H Grollman and Odest Chadwicke Jenkins. Multimap regression for perceptual aliasing in learning finite state machine robot controllers from interactive demonstration. In *RSS Workshop on Regression in Robotics*, Seattle, Washington, USA, June 2009. **Winner: Best Poster.**

Daniel H Grollman and Odest Chadwicke Jenkins. Learning multi-objective control policies from demonstration. In *IROS workshop on Robotics Challenges for Machine Learning*, Nice, France, September 2008.

Micah Lapping-Carr, Odest Chadwicke Jenkins, Daniel H Grollman, Jonas N Schwertfeger, and Theodora R Hinkle. Wiimote interfaces for lifelong robot learning. In *AAAI Spring Symposium*, Menlo Park, CA, USA, March 2008.

Daniel H Grollman and Odest Chadwicke Jenkins. (Machine) learning robot control policies. In *NIPS Workshop on Robotics Challenges for Machine Learning*, Whistler, BC, Canada, December 2007.

Daniel H Grollman and Odest Chadwicke Jenkins. Learning robot soccer from demonstration: Ball grasping. In *R:SS Workshop on Robot Manipulation: Sensing and Adapting to the Real World*, Atlanta, GA, USA, June 2007.

Daniel H Grollman, Odest Chadwicke Jenkins, and Frank Wood. Discovering natural kinds of robot sensory experiences in unstructured environments. In *North East Student Colloquium on Artificial Intelligence*, Ithica, NY, USA, April 2006.

Daniel H. Grollman, Odest Chadwicke Jenkins, and Frank Wood. Discovering natural kinds of robot sensory experiences in unstructured environments. In *NIPS Workshop on Machine Learning Based Robotics in Unstructured Environments.*, Whistler, BC, Canada, December 2005.

#### WHITE PAPERS / TECHNICAL REPORTS

Daniel H. Grollman, Odest Chadwicke Jenkins, and Jesse Butterfield. RGame: Embodied Gaming for Robot Learning by Demonstration. Technical report, AAI, 2009.

Frank Wood, Daniel H. Grollman, Katherine A. Heller, Odest C. Jenkins, and Michael Black. Incremental Nonparametric Bayesian Regression. Technical Report CS-08-07, Brown University Department of Computer Science, 2008.

Daniel H Grollman, Odest Chadwicke Jenkins, and Frank Wood. Extensible data-driven classification of robot sensor data. Technical report, Brown University Department of Computer Science, 2005.

Stuart Andrews, Lijuan Cai, David Gondek, Amy Greenwald, Daniel Grollman, Arni Mar Jonsson, Keith Hall, Matthew Lease, Bryant Ng, John Raiti, Victoria Sweetser, and Jenine Turner. Astrology: The study of astro teller. In *International Conference on Machine Learning Physiological Modeling Contest*, 2004.

#### OTHER TALKS

Getting robots to do what you want (even if you don't know what that is, exactly). Willow Garage, June 2011.

Teaching motor skills from humans to humanoids. "Humanoids: What's next?" workshop at Humanoids 2010, December 2010.

Robots, and Learning, and the Future! Oh my! Applied Minds, July 2009.

Learning multimap robot control policies from demonstration. University of Massachusetts, Amherst, April 2009.

Multimap control policies. Washington University in St. Louis, February 2009.

Learning from multimap demonstration. Harvard Artificial Intelligence Research Group, November 2008.

Sparse incremental learning for interactive robot control policy estimation. New England Manipulation Symposium, May 2008.

Interactive robot learning with statistical regression. HRI Young Pioneers Workshop, March 2008.

Learning robot soccer skills from demonstration. New England Manipulation Symposium, June 2007.

Dogged learning for robots. HRI Young Pioneers Workshop, March 2007.

#### Leadership Experience

Teaching: TA for Machine Learning (Brown '06, EPFL '11) and Cryptography (Brown '04). Assistant Instructor Brown Tae Kwon Do ('08-'09).

Mentoring: Captain of Brown # Robocup team ('06-'09). Organizer of the Machine Learning Reading Group ('06-'07). WhizKids Foundation staff ('04-'09).

Advising: High school interns: Dennis Wu ('08), Graham Hall ('07), Sean Smith ('06)  
Undergraduates: Christian Daniel ('10), Jesse Errico ('08), Micah Lapping-Carr ('06-'09)  
Masters students: Sanghoon Cha ('09), Suamporn Ketprechasawat ('06)

Directing: Directed productions of Gilbert & Sullivan's "The Mikado" ('05) and "Iolanthe" ('02).

Representing: Served as Faculty-Grad Liaison for 2 terms (06-08), and on the Brown student activities advisory board (04-05).

#### Awards / Recognition

Best Cognitive Robotics Paper, ICRA 2011

Best Poster, R:SS 2009 Workshop on Regression in Robotics.

Best student video, AAI 2008 video contest.

Human-Robot Interaction Young Pioneer, 2007 and 2008.

Intel Science Talent Search Finalist, 1999

#### Professional Service

Program Comm.: 2011 ICANN, 2011, 2010 R:SS, 2011 AAI-PGAI, 2008 AAI

Co-Chair: ICRA 2009 Human-Robot Interaction competition

Program Chair: 2009 AAI Spring Symposium (Learning from Humans)

Student Organizer: 2008 ICRA workshop (NEWHRI)

Webmaster: 2006 Robotics: Science and Systems  
Reviewer (5 years): ICSR, TAROS, IROS, ICRA, JFR, ICANN, AAI, R:SS,  
RAS, HUMAN, RO-MAN, AURO, ML, RAM, HRI, IJCAI, IJHR

**Personal Information**

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