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Guy Hoffman curriculum vitae

Education & Professional Experience

2009 **Postdoctoral Associate** **Georgia Institute of Technology**

Under supervision of Prof. Gil Weinberg. Projected work on ensemble music robots: perception-action networks for timing, practice, and fluent musical interaction.

2008 **Visiting Research Fellow** **Interdisciplinary Center Herzliyah**

Research in the college's School of Communication. Led the development of a new technology and content platform for context-aware urban media. Adjunct lecturer for Human-Computer Interaction.

2007-2008 **Postdoctoral Associate** **MIT**

Research in Human-robot interaction. Responsibilities included managing the lab's day-to-day operation and graduate student work during my advisor's leave of absence.

2003-2007 **Ph.D, Media Arts and Sciences** **MIT**

Research in human-robot interaction (HRI), social skills for robots, cognitive theories and architectures for robotic teammates and robotic stage actors. Coursework, among others, in advanced AI techniques, HRI, industrial design, multi-scale fabrication, theater acting, design, and architecture (GPA: 5.0/5.0).

2002-2003 **M.F.A. Design and Technology** **Parsons School of Design**

Animation concentration: classical hand-drawn and 3D model animation. Produced two animated shorts, and designed a large-scale data visualization project. Graduate studies in animation, video, motion graphics, digital art, and data visualization. Degree incomplete – transferred to MIT.

2001-2003 **Project Manager, Product Manager** **Check Point Software Technologies**

Initiation, design, implementation, and sales advocacy of company's flagship cellular data security project, a one-man effort up to point of first sale, later evolving into a company-spanning team under my management.

1998-2000 **M.Sc. Computer Science** **Tel Aviv University**

Graduated summa cum laude (GPA: 96/100). M.Sc. thesis: "A Quadtree Approach to Motion Segmentation into Layers". Graduate studies in the fields of communication, computer vision, graphics, neural networks, Artificial Intelligence, and Artificial Life.

1999-2000 **VP Product Development** **uTOK inc.**

Designed and supervised the development of the company's main product line, an online collaboration application, as well as the UI and visual language of the company's other products and web pages.

1997-2005 **Writer and Columnist** **Ha'aretz Israeli National Daily**

Lead science reporter in the publication's technology magazine; Columnist of a weekly techno-social critique.

1997-1999 **Administrator, Robotics and Computer Vision Lab** **Tel Aviv University**

Developed computer vision and robotics applications, libraries, and webpages, and guided undergraduate students on projects.

1996-1997 **Software Engineer, Networked Computer Games** **SEA Multimedia**

Software development and graphic design of first-of-its-kind multi-user online naval warfare game.

1991-1996 **Officer, Instructor, Course Commander** **Israeli Defense Forces**

Directed classified research and analysis projects in hi-tech unit. Then instructed, and commanded over the training course for the unit.

Awards, Grants & Scholarships

2007	Best student paper, 2nd Int'l Conference for Human-Robot Interaction
2007	Gold Prize, IEEE RO-MAN Robot Design Competition
2006	Best student poster, 1st Int'l Conference for Human-Robot Interaction
2003–2007	MIT Full Tuition Scholarship
2004–2005	Office for Naval Research Grant
2002	Parsons School of Design Scholarship
1999	Hermann Minkovsky-MINERVA Center for Geometry grant
1996–2000	Adi Lautman Full Tuition Scholarship

Selected Invited Talks

2008	Bezalel Academy of Art and Design, Jerusalem, Israel
	Rosh Pina Digital Media Conference, Rosh Pina, Israel
	University of Texas Austin, Department of Psychology
	National Academy of Sciences — Kavli Frontiers of Science, Irvine, CA
	International Symposium on Robot and Human Interactive Communication, Munich
	Radboud University, Institute for Cognition and Information, Nijmegen, NL
	Stanford University Department of Communication, Stanford, CA
	Research Salon de Nissan, MIT, Cambridge, MA
2007	KAIST Korean Institute of Technology, Daejon, Korea
	International Symposium on Urban Engineering and Sustainability, Daejon, Korea
	Columbia University Department of Architecture, New York, NY
	Interdisciplinary Center Computer Science Department, Herzliyah, Israel
	Inaugural Conference of BMW Welt, Munich, Germany
	Boston Museum of Science, Boston, MA
	"Robots at Play" Research Conference, Odense, Denmark
	SIGGRAPH 2007, San Diego, CA
	International Conference on Human-Robot Interaction, Washington DC
2006	International AAAI Workshop on Cognitive Robotics, Boston, MA
	Canadian Centre for Architecture, Montreal, QC
2004–2006	AAAI Spring and Fall Symposia, Stanford, CA and Washington DC
2005	Israeli Chapter of SIGCHI, Herzliyah, Israel
	Berkman Center for Internet and Society at Harvard Law School, Cambridge, MA
2004	AIAA Intelligent Systems Conference, Chicago, IL
	International Conference on Autonomous Agents and Multiagent Systems, New York, NY
	CHI 2004 Workshop on Human-Robot Interaction

Invited referee for a number of top academic journals and conferences, including **IEEE Transaction on Robotics**, ACM/IEEE International Conference on **Human-Robot Interaction**, ACM SIGCHI Conference on Human Factors in Computing Systems **(CHI)**, and others.

Exhibitions & Art Publications

2008	Time Bracketing composites at Los Angeles Municipal Art Gallery "Digital Eyes"
	Composites and data visualization in CCA Publication "Inside the Sponge"
	Digital Water Pavilion at the Zaragoza 2008 World Expo
2007	Time Bracketing composites in SIGGRAPH 2007 Art Gallery
	"The Confessor" — A Human-Robot Play at MIT "Playwrights in Performance"
	Time Bracketing composites in W.J.Mitchell's "Imagining MIT", MIT Press
	Co-curated "Imagining Ourselves" exhibit for the Int'l Museum of Women
2006	Composites and data visualization for the Canadian Centre for Architecture
	Time Bracketing composites, DIME Art Show, Bangkok
	Interactive slit-scan video Installation, Art Interactive, Cambridge, MA
2005	Book cover art, "How to get around MIT"
2004	Video art and audio installation, Simplicity Design Show, Cambridge, MA
	Short film licensed to Comedy Central (MTV Networks)
2003	Short film opening the SIGGRAPH MetroCAF animation festival, NYC
	Two short films, Parsons Animation and DV Festival, NYC

Teaching

2008	Adjunct Professor, "Human-Computer Interaction", School of Communication, Interdisciplinary Center Herzliyah, Israel
2007	Guest lecturer, "Human-Robot Interaction: Relational Machines", MIT Media Lab
	Tutorial: 3D modeling in Maya and SolidWorks, MIT Media Lab
	Assistant in hands-on animatronics workshop, grades 6-8, Grafton, MA
2006	Winter Session Class: Advanced Photoshop and Elementary Zen Buddhism, MIT
2000	Guest lecturer, "The Language of the Cinematic Text", Tel Aviv University
1998-1999	Teaching Assistant, "Computational Vision and Robotics", Tel Aviv University, Israel
1994-1996	Instructor and course commander in elite technology unit, teaching classes in algebra, probability, software design, languages, algorithms, and others.

Design

Extensive exhibited work in the fields of data visualization, 3D and traditional animation, product design, architectural research and design, graphic design, interaction design, audio installations, digital photography, miniature set design, logo and branding, video, and new media art.

Portfolio upon request

Languages

Fluent in **Hebrew, English, German**; literate and conversational in **Spanish, Dutch**, and **French**; basic knowledge of **Italian, Arabic, and Czech**.

Academic Publications

Journals

G. Hoffman and C. Breazeal. *Cost-Based Anticipatory Action Selection for Human-Robot Fluency*, **IEEE Transactions on Robotics**, Vol. 23, No. 5, 2007.

A. Brooks, J. Gray, G. Hoffman, A. Lockerd, H. Lee and C. Breazeal. *Robot's Play: Interactive Games with Sociable Machines* , **Computers in Entertainment**, Vol. 2, No. 3 , July 2004 .

C. Breazeal, A. Brooks, J. Gray, G. Hoffman, C. Kidd, H. Lee, J. Lieberman, A. Lockerd and D. Chilongo. *Tutelage and Collaboration for Humanoid Robots*, **International Journal of Humanoid Robotics**, Vol. 1, No. 2 ,2004.

Peer-reviewed Conferences

G. Hoffman, R. Kubat, and C. Breazeal. *A Hybrid Control System for Puppeteering a Live Robotic Stage Actor*, Proceedings of the 17th International Symposium on Robot and Human Interactive Communication (**RO-MAN'08**), August 2008.

G. Hoffman and C. Breazeal. *Anticipatory Perceptual Simulation for Human-Robot Joint Practice: Theory and Application Study*. Proceedings of the 23rd AAAI Conference for Artificial Intelligence (**AAAI'08**), July 2008.

G. Hoffman and C. Breazeal. *Effects of Anticipatory Action on Human-robot Teamwork: Efficiency, Fluency, and Perception of Team*, ACM/IEEE international conference on Human-robot interaction (**HRI'07**), March 2007. ***Best Student Paper***.

G. Hoffman. *Time Bracketing*, 1st International Conference on Digital Interactive Media in Entertainment (**DIME'06**), October 2006.

A. L. Thomaz, G. Hoffman, and C. Breazeal. *Reinforcement Learning with Human Teachers: Understanding How People Want to Teach Robots.* In Proceedings of the 15th IEEE International Symposium on Robot and Human Interactive Communication (**RO-MAN'06**), 2006.

A. L. Thomaz, G. Hoffman and C. Breazeal. *Experiments in Socially Guided Machine Learning: Understanding Human Intent of Reward/Punishment*, ACM/IEEE international conference on Human-robot interaction (**HRI'06**), March 2006. ***Best Student Poster***.

C. Breazeal, C. Kidd, A. L. Thomaz, G. Hoffman, and M. Berlin. *Effects of Nonverbal Communication on Efficiency and Robustness in Human-robot Teamwork."* In Proceedings of the **IROS, 2005**.

C. Breazeal, A. Brooks, D. Chilongo, J. Gray, G. Hoffman, C. Kidd, H. Lee, J. Lieberman, and A. Lockerd. *Working Collaboratively with Humanoid Robots.* In Proceedings of IEEE-RAS/RSJ International Conference on Humanoid Robots (**Humanoids'04**), Santa Monica, CA, 2004.

G. Hoffman and C. Breazeal. *Collaboration in Human-Robot Teams* , 1st **AIAA'04** Intelligent Systems Conference, Chicago, IL, September 2004.

C. Breazeal, J. Gray, G. Hoffman and M. Berlin. *Social Robots: Beyond Tools to Partners*, IEEE International Workshop on Robot and Human Interactive Communication (**RO-MAN'04**), Kurashiki , September 2004.

C. Breazeal, G. Hoffman, and A. Lockerd. *Teaching and working with robots as a collaboration.* In Proceedings of Third International Joint Conference on Autonomous Agents and Multi-agent Systems (**AAMAS'04**), New York, NY, 2004.

A. Brooks, J. Gray, G. Hoffman, A. Lockerd, H. Lee, and C. Breazeal. *Robot's play: interactive Games with Sociable Machines.* In Proceedings of the International Conference on Advances in Computer Entertainment (**ACE'04**), June 2004.

Refereed Workshops

G. Hoffman. *Acting Lessons for Artificial Intelligence*, Abstract, 50th Anniversary Summit of Artificial Intelligence, July 2006.

G. Hoffman and C. Breazeal, *Robotic Partners' Bodies and Minds: An Embodied Approach to Fluid Human-Robot Collaboration*, Fifth Internationall Workshop on Cognitive Robotics, July 2006.

G. Hoffman and C. Breazeal. *What Lies Ahead? Expectation Management in Human-Robot Collaboration*. AAAI 2006 Spring Symposium.

A. L. Thomaz, G. Hoffman, and C. Breazeal. *Real-time Interactive Reinforcement Learning for Robots."* In AAAI 2005 Workshop on Human Comprehensible Machine Learning, 2005.

G. Hoffman and C. Breazeal , *Robots that Work in Collaboration with People* , AAAI Fall Symposium on the Intersection of Cognitive Science and Robotics, 2004.