

Curriculum Vitae

Hadas Kress-Gazit

Assistant Professor

Sibley School of Mechanical and Aerospace Engineering
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RESEARCH INTERESTS

Robotics, Motion Planning, Task Planning, Model Checking, Verification, Hybrid Systems, Language for Robotics, Human Robot Interaction.

PROFESSIONAL EXPERIENCE

Assistant Professor (Jan. 2009 - Present)

Sibley School of Mechanical and Aerospace Engineering
Cornell University, Ithaca, NY.

Post-Doctoral Researcher (Aug. 2008 - Dec. 2008)

GRASP Lab, University of Pennsylvania, Philadelphia, PA, USA.

Research Assistant (Sept. 2003 - Aug. 2008)

GRASP Lab, University of Pennsylvania, Philadelphia, PA, USA. Developed methods to create robot controllers that are guaranteed to satisfy high level tasks under the ARO ACCLIMATE and MURI SUBTLE grants.

Engineer (Sep. 2001 - Aug. 2003)

Missile division, RAFAEL, Israel. Designed navigation algorithms using MATLAB based tools and simulations. Wrote specifications for real-time software and integrated the navigation segment into a complete system.

Engineer (Oct. 1999 - Sep. 2001)

Chip Design group of IBM's Haifa Design Center, Israel. Developed models for design validation. Integrated verification environments, wrote and ran tests using VHDL, Formal Verification, Perl and internal IBM tools.

EDUCATION

University of Pennsylvania (August 2008), Philadelphia, PA, USA
Ph.D. in Electrical Engineering, Department of Electrical and Systems Engineering
Advisor: Prof. George J. Pappas

University of Pennsylvania (May 2005), Philadelphia, PA, USA
Master of Science in Engineering, Department of Electrical and Systems Engineering
Advisor: Prof. George J. Pappas

Technion (Jan 2002), Haifa, Israel
B.Sc Cum Laude, Department of Electrical Engineering

TEACHING EXPERIENCE

Lecturer (Spring 2009)
Cornell University
MAE 6740: *Hybrid Systems*

Teaching Assistant (Spring 2007)
University of Pennsylvania, Philadelphia, PA, USA
ESE 301: *Engineering Probability*

Teaching Assistant (Spring 2006)
University of Pennsylvania, Philadelphia, PA, USA
ESE 113: *Introduction to Electrical and Systems Engineering - Systems*

Teaching Assistant (Fall 2005)
University of Pennsylvania, Philadelphia, PA, USA
ESE 111/112: *Introduction to Electrical and Systems Engineering - Devices*

Grader (Fall 2001)
Technion, Haifa, Israel
Introduction to Robotics

Instructor (1996 - 1999)
Machon Shachar, Haifa, Israel
Teaching courses preparing for the psychometric exam necessary for applying to universities in Israel.

AWARDS & MEMBERSHIPS

Charles Hallac and Sarah Keil Wolf Award - Best dissertation by a female Electrical and Systems Engineering Ph.D. Candidate.

Finalist - Best Paper (2007 IEEE/RSJ International Conference on Intelligent Robots and Systems)

Finalist - Best Student Paper (2007 International Conference on Robotics and Automation)

Graduate Research Fellowship (Sept. 2003 - Aug. 2008)
Dept. of Electrical and Systems Engineering, University of Pennsylvania, Philadelphia, PA, USA

IEEE Member - Robotics and Automation Society (RAS) and Women in Engineering

PUBLICATIONS

Journal Publications

H. Kress-Gazit, G. E. Fainekos and G. J. Pappas, Temporal Logic-based Reactive Mission and Motion Planning. *IEEE Transactions on Robotics*, To Appear.

G. E. Fainekos, A. Girard, H. Kress-Gazit and G. J. Pappas, Temporal Logic Motion Planning for Dynamic Mobile Robots. *Automatica*, Volume 45, Issue 2, February 2009, Pages 343-352, Elsevier

H. Kress-Gazit, G. E. Fainekos and G. J. Pappas, Translating Structured English to Robot Controllers. Invited paper, *Advanced Robotics Special Issue on Selected Papers from IROS 2007*, Vol. 22, No. 12, pp. 1343-1359, 2008.

H. Kress-Gazit, D. C. Conner, H. Choset, A. Rizzi and G. J. Pappas, Courteous cars: Decentralized multiagent traffic coordination. *Special Issue of the IEEE Robotics and Automation Magazine on Multi-Agent Robotics*, March 2008.

Thesis

H. Kress-Gazit, Transforming high level tasks to low level controllers. PhD dissertation, Department of Electrical and Systems Engineering, University of Pennsylvania, 2008.

Conference Publications

H. Kress-Gazit, N. Ayanian, G. J. Pappas and V. Kumar, Recycling Controllers, *IEEE Conference on Automation Science and Engineering*, Washington DC, August 2008.

H. Kress-Gazit and G. J. Pappas, Automatically Synthesizing a Planning and Control Subsystem for the DARPA Urban Challenge, *IEEE Conference on Automation Science and Engineering*, Washington DC, August 2008.

D. C. Conner, H. Kress-Gazit, H. Choset, A. Rizzi and G. J. Pappas, Valet Parking Without a Valet. In the *Proceedings of the 2007 IEEE/RSJ International Conference on Intelligent Robots and Systems*, San Diego, October 2007. **Finalist, Best Paper Award**

H. Kress-Gazit, G. E. Fainekos and G. J. Pappas, From Structured English to Robot Motion. In the *Proceedings of the 2007 IEEE/RSJ International Conference on Intelligent Robots and Systems*, San Diego, October 2007

H. Kress-Gazit, G. E. Fainekos and G. J. Pappas, Wheres Waldo? Sensor-Based Temporal Logic Motion Planning. In the *Proceedings of the 2007 International Conference on Robotics and Automation*, Rome, Italy, April 2007. **Finalist, Best Student Paper Award**

G. E. Fainekos, H. Kress-Gazit and G. J. Pappas, Hybrid Controllers for Path Planning: A Temporal Logic Approach. In the *Proceedings of the 44th IEEE Conference on Decision and Control*, Seville, December 2005

G. E. Fainekos, H. Kress-Gazit and G. J. Pappas, Temporal Logic Motion Planning for Mobile Robots. In the *Proceedings of the International Conference on Robotics and Automation*, Barcelona, April 2005

Technical Reports

G. E. Fainekos, A. Girard, H. Kress-Gazit and G. J. Pappas, Temporal Logic Motion Planning for Dynamic Mobile Robots. Technical Report MS-CIS-07-02, Department of CIS, University of Pennsylvania, January 2007

SERVICE

Program committee - Robotics Science and Systems (RSS) , 2009

Workshop organizer - "Formal Methods in Robotics and Automation", ICRA 2009

Reviewer - IEEE Transactions on Robotics; IEEE Transactions on Automation Science and Engineering; IEEE International Conference on Robotics and Automation 2009,2008; IEEE Conference on Decision and Control 2008,2009; ACM/IEEE International Conference on Human-Robot Interaction 2009; IEEE Conference on Automation Science and Engineering 2008; IEEE/RSJ International Conference on Intelligent Robots and Systems 2007.

INVITED TALKS

Workshop on Situated Understanding of Intention, Philadelphia PA, July 2009

RSS workshop on Bridging the gap between high-level discrete representations and low-level continuous behaviors, Seattle WA, June 2009

ICRA workshop on Formal Methods in Robotics and Automation, Kobe, Japan, May 2009

Robotics, Controls and Mechatronics colloquium, University of Washington, USA, January 2009

Mechanical and Aerospace Engineering Colloquium, Cornell University, USA, April 2008

Computer Science Colloquium, Rensselaer Polytechnic Institute, USA, April 2008

Electrical, Computer, and Systems Engineering seminar, Rensselaer Polytechnic Institute, USA, April 2008

Autonomous Vehicles/Robots Seminar, University of Michigan, USA, March 2008

Aero-Astro seminar, Massachusetts Institute of Technology, USA, March 2008

Center for the Foundations of Robotics Talk, Robotics Institute, Carnegie Mellon University, USA, September 2007

Computer Science Colloquium, Technion, Israel, November 2007

Computer Science Colloquium, Hebrew University, Israel, November 2007

Computer Science Colloquium, Ben Gurion University, Israel, November 2007

Computer Science Colloquium, Bar Ilan University, Israel, November 2007