Henry C. Lin
Department of Computer Science
The Johns Hopkins University
New Engineering Bldg. 224
3400 N. Charles St.
Baltimore, MD 21218
http://www.cs.jhu.edu/~hcl
July 19, 2008

EDUCATION

Ph.D. in Computer Science, Johns Hopkins University, 2003-present
Topics: Computer Vision, Statistical Modeling, Computer Integrated Surgery
Advisor: Dr. Gregory D. Hager

M.S. in Computer Science, Columbia University, 2003
Thesis: Hidden Markov Models and Contextual References
Advisor: Dr. John R. Kender

B.S. in Computer Science, Carnegie Mellon University, 1999
Independent Research: Automated Feature Correspondence in Image Morphing
Using Neural Networks
Advisor: Dr. Steven Seitz

POSITIONS HELD

Graduate Research Assistant
Computational Interaction and Robotics Laboratory
NSF ERC for Computer Integrated Surgical Systems and Technology
Johns Hopkins University, 2003–present.

Visiting Graduate Research Assistant
Laboratory for Robotics and Embedded Systems (I6)
Technical University of Munich, Germany, June-August 2007

Instructor
Intersession, Department of Computer Science
Exploring Vision in the Real World – Matlab Intensive
Johns Hopkins University, 2007, 2008.

Instructor
Intersession, Department of Computer Science
Exploring Vision in the Real World
Johns Hopkins University, 2006.

Software Developer
Bell Laboratories
Lucent Technologies, 1999-2003.

Technical Intern
Bell Laboratories
Lucent Technologies, 1997, 1998

HONORS, AWARDS AND FELLOWSHIPS

Spring 2007 ERC CISST Student Seminar Series – 2nd place

2006-2007 Link Fellowship for Advanced Simulation and Training

2006 Johns Hopkins Student Employee of the Year - Finalist

2005 MICCAI Best Student Paper Award
Category: Computer Assisted Intervention and Robotics
Paper: *Automatic Detection and Segmentation of Robot-Assisted Surgical Motions*

National Collegiate Scholar, 1999

Andrew Carnegie Scholarship, 1995-1999

PROFESSIONAL ACTIVITIES

IEEE Student Member, 2004-present

IEEE Robotics and Automation Society, 2005-present

MICCAI Society, 2005-present

Treasurer, Computer Integrated Surgery Student Research Society, 2005-06

President, Computer Integrated Surgery Student Research Society, 2003-04

Student Representative, Diversity Committee, NSF ERC for Computer Integrated
Surgical Systems and Technology, 2003-2004.

PUBLICATIONS
Journal Articles:

1. Henry C. Lin, Izhak Shafran, David Yuh, Gregory D. Hager. Towards automatic skill evaluation: Detection and segmentation of robot-assisted surgical motions. Computer Aided Surgery, September, 2006.

2. Darius Burschka, Jason J. Corso, Maneesh Dewan, William Lau, Ming Li, Henry Lin, Panadda Marayong, Nicholas Ramey, Gregory D. Hager, Brian Hoffman, David Larkin, and Christopher Hasser. Navigating Inner Space: 3-D Assistance for Minimally Invasive Surgery. Robotics and Autonomous System, 2005.

Peer-Reviewed Conferences:

3. Carol E. Reiley, Henry C. Lin, Balakrishnan Varadarajan, Sanjeev Khudanpur, David D. Yuh, Gregory D. Hager. Automatic Recognition Using Statistical Modeling for Capturing Variability of Surgical Motions. Medicine Meets Virtual Reality Conference (MMVR) 2008.

4. Henry C. Lin, Panadda Marayong, Keith Mills, Ray Karam, Peter Kazanzides, Allison Okamura, Gregory D. Hager. Portability and Applicability of Virtual Fixtures Across Medical and Manufacturing Tasks. International Conference on Robotics and Automation (ICRA) 2006.

5. Henry C. Lin, Izhak Shafran, Todd E. Murphy, Allison M. Okamura, David D. Yuh, and Gregory D. Hager. Automatic Detection and Segmentation of Robot-Assisted Surgical Motions. In Proceedings of Medical Image Computing and Computer Assisted Intervention (MICCAI) 2005, LNCS 3749, pages 802-810, 2005.

Abstracts, Workshops, Posters and Short Papers:

6. Tiffany L. Chen, Henry C. Lin, Helmuth Radrich, Gregory D. Hager. Structured Induction for Manipulative Tasks. International Research and Education in Engineering Conference, Purdue University, West Lafayette, IN, 2007.

7. Tiffany L. Chen, Henry C. Lin, Stuart Shippey, Victoria L. Handa, Gregory D. Hager. Tool Tracking for Surgical Motion Segmentation and Recognition for Surgical Skill Assessment. Biomedical Engineering Society Meeting, Los Angeles, CA, 2007.

8. Henry Lin, Izhak Shafran, David D. Yuh, and Gregory D. Hager. Vision-Based Automatic Detection and Segmentation of Robot-Assisted Surgical Motions. Medicine Meets Virtual Reality Conference (MMVR) 2006.

9. Henry Lin, Maneesh Dewan, Panadda Marayong, James Handa, and Gregory D. Hager. Vision-Based Human-Machine Collaborative System for Ophthalmic Micro-Surgery. Medicine Meets Virtual Reality Conference (MMVR) 2006.

10. Darius Burschka, Jason J. Corso, Maneesh Dewan, Gregory D. Hager, William Lau, Ming Li, Henry Lin, Panadda Marayong, and Nicholas Ramey. Navigating Inner Space: 3-D Assistance for Minimally Invasive Surgery. In Workshop on Advances in Robot Vision - From Domestic Environments to Medical Application, (D. Kragic and H. Christensen, eds.), IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS 2004, Sendai, Japan, 2004.

Other:

11. Henry Lin. A Flexible Human-In-The-Loop Microsystem Assembly Platform. Qualifying Project Report, Department of Computer Science, Johns Hopkins University, 2005.
Advisor: Dr. Peter Kazanzides.

12. Henry Lin. Hidden Markov Models and Contextual References. Qualifying Project Report, Department of Computer Science, Johns Hopkins University, 2003.
Advisor: Dr. Gregory D. Hager.

CONFERENCE PRESENTATIONS

14th Medicine Meets Virtual Reality, Long Beach, CA, January 2006.

8th International Conference on Medical Image Computing and Computer Assisted Intervention, Palm Springs, CA, 2005.

INVITED TALKS

Automatic Detection and Segmentation of Robot-Assisted Surgical Motions. UCLA Medical Imaging Informatics Group, University of California – Los Angeles, January 2006.

The Language of Surgery – Extraction and Modeling of Coherent Structure in Surgical Motion. Laboratory for Robotics and Embedded Systems (I6), Technical University of Munich, August 2007.

PEER REVIEW

Journal Peer Reviewer for *Expert Review of Medical Devices*

Journal Peer Reviewer for *International Journal of Computer Assisted Radiology and Surgery*

.
TEACHING
Listed Courses Taught:

600.161 Exploring Vision in the Real World – Matlab Intensive, Intersession 2007, 2008

600.161 Exploring Vision in the Real World, Intersession 2006

Guest Lectures:

600.461 Computer Vision
Topic: Grouping and Segmentation, September, 2006

600.461 Computer Vision
Topic: Color Spaces, September, 2005

600.226 Data Structures
Topic: Experience in Industry and Programming, March, 2005

Mentorship:

Tiffany Chen, Johns Hopkins University, 2007
Department of Biomedical Engineering, Master's Student
Topic: Surgical Skill Evaluation and Surgical Modeling

Elia Junco, University of Florida, 2006
Research Experience for Undergraduates
Topic: Stereo Vision and Surgical Modeling

Clare Yang, Miami University, 2005
Research Experience for Undergraduates
Topic: Stereo Vision and Retinal Vein Cannulation

Keith Mills, Clemson University, 2004
Research Experience for Undergraduates
Topic: Virtual Fixtures, Invenios Manufacturing Robot

PRESS

Unraveling 'Language of Surgery'
The JHU Gazette
http://www.jhu.edu/~gazette/2006/23oct06/23lang.html

Computer Scientists Unravel 'Language of Surgery'
The Science Daily - Computer Scientists Unravel 'Language of Surgery'
http://www.sciencedaily.com/releases/2006/12/061208101350.htm

'Language of Surgery' in the Financial Times Germany, Jan 16, 2007,
http://www.financialtimes.de/forschung/151359.html

WEBSITES AUTHORED

Computational Interaction and Robotics Laboratory, 2003-present
http://www.cs.jhu.edu/CIRL

Computational Interaction and Robotics Laboratory, intranet, 2005-present
http://pong.cs.jhu.edu

Surgical Modeling Project Page, 2005-present
http://www.cs.jhu.edu/CIRL/projects/SurgicalModeling

Henry Lin Homepage, Johns Hopkins University, 2003-present
http://www.cs.jhu.edu/~hcl

PERSONAL DATA

Date of Birth: May 29, 1977

Place of Birth: Taiwan

Citizenship: United States

Languages: English, Taiwanese, Spoken Mandarin

Contact Information: Department of Computer Science
                        G.W.C. Whiting School of Engineering
                        Johns Hopkins University
                        NEB 224
                        3400 N. Charles St.
                        Baltimore, MD 21218
                        Phone: (609)721-3759
                        Email: hcl@cs.jhu.edu
                        Personal Webpage: http://www.cs.jhu.edu/~hcl