Jeffrey Ho

CONTACT INFORMATION

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RESEARCH INTERESTS

Computer Vision, Computer Graphics, Visual Tracking, Face Recognition, Data and Image Clustering.

CITIZENSHIP

USA

EDUCATION

University of Illinois, Urbana, Illinois USA

Ph.D. in Mathematics, October 1999.

- Dissertation Title: "On the Quantum Cohomology of Fano Toric Manifolds and the Intersection Cohomology of Singular Symplectic Quotients."
- Advisor: Richard Bishop and Eugene Lerman.

M.S. in Mathematics, May 1993.
B.S. in Mathematics, May 1991.

University of Illinois, Urbana, Illinois USA

M.CS. in Computer Science, May, 2000.

RESEARCH EXPERIENCE

University of California at San Diego, La Jolla, CA
PostDoctoral Research Associate **January, 2003 - present**
Research Topics include Visual Tracking, Unsupervised Image and Data Clustering, Learning Theory and Computer Graphics.
Advisor: David Kriegman.

Honda Fundamental Research Lab, Mountain View, CA
Technical Consultant **June-December, 2002 & September-December, 2003**
Work on vision part of Honda's Humanoid ASIMO project.
Research Topics include Face Tracking, Learning and Recognition.
Contact: Ming-Hsuan Yang and Kikuo Fujimura.

Beckman Institute, Urbana, IL
PostDoctoral Research Associate **October 2000-June, 2002**
Research Topics include Illumination, Face and Pattern Recognition, Mesh Compression, Automatic Texture Generation.
Advisor: David Kriegman. (Supported by National Science Foundation)

University of Illinois, Urbana, IL
Graduate Research Assistant **Aug, 1999-June, 2000**
Research Topics include Illumination and Mesh Modelling.
Advisor: David Kriegman.

TEACHING EXPERIENCE

University of Illinois, Urbana, IL
Instructor in Department of Mathematics 1992-1997
Math 120 Calculus I
Math 132 Calculus II
Math 242 Calculus III

Math 134 Mathematics for Business Students

Professional Activities

Reviewer: IEEE Transaction on Pattern Analysis and Machine Intelligence, IEEE Transaction on Robotics, IEEE Conference on Computer Vision and Pattern Recognition, IEEE Conference on Pattern Recognition, IEEE Conference on Automatic Face and Gesture Recognition, International Conference on Computer Vision.

Program Committee: IEEE Conference on Computer Vision and Pattern Recognition Workshop on Real-time 3D Sensors and Their Use, 2004.

NSF Panel: Post-Doctoral Research Fellowship (2002).

IEEE Member: 2002-Present.

Presentations

"Robust Visual Tracking using Uniform Reconstruction Error Norm"
Honda Fundamental Research Lab, Mountain View, CA, December 2003.

"Clustering Appearances of Objects Under Varying Illumination Conditions,"
IEEE Conference on Visualization, Madison, WI, June 2003.

Semester Seminars on Visual Tracking, Spring 2002
Beckman Institute, Urban, IL.

"On Reducing the Complexity of Illumination Cones,"
IEEE Conference on Computer Vision and Pattern Recognition, Kauai, Hawaii, December 2001.

"Compressing Large Polygonal Models,"
IEEE Conference on Visualization, San Diego, CA, October 2001.

"Compressing Large Polygonal Models,"
SIGGRAPH01 Sketch and Applications, Los Angeles, CA, August 2001.

Seminars on Symplectic Topology and Geometry, Fall 1997 Department of Mathematics, University of Illinois, Urbana, IL.

"On the Quantum Cohomology of Toric Fano Manifolds,"
American Mathematical Society Regional Conference, Montreal, Quebec, September 1997.

Seminars on Floer Cohomology, Fall 1994
Deparment of Mathematics, University of Illinois, Urbana, IL.

Awards

National Science Foundation Post-Doctoral Research Associate 2000-2002.
K.T. Chen Prize for Geometry and Topology
Department of Mathematics, University of Illinois 1995.
Graduate Teaching Assistant Award
Department of Mathematics, University of Illinois 1995.
U.S. Department of Education Graduate Fellowship 1993-1997.

Grants

California Microelectronics Innovation Computer Research Opportunity (MICRO),
2003-2004, $40000 (with David Kriegman).
Honda Fundamental Research Grant, 2003-2004, $50000 (with David Kriegman).

Publications

1. Jeffrey Ho, Kuang-Chih Lee, David Kriegman, "Visual Tracking with Learned Linear Subspaces", submitted to *IEEE Conf. On Computer Vision and Pattern Recognition*, Washington D.C., U.S.A., 2004.

2. Jongwoo Lim, Jeffrey Ho, Ming-Hsuan Yang, Kuang-Chih Lee, David Kriegman, "Image Clustering with Metric, Local Linearity and Affine Symmetry", to appear in *European Conf. On Computer Vision*, Prague, Czech Republic, 2004.
3. Kuang-chih Lee, Jeffrey Ho, David Kriegman, "Acquiring Linear Subspaces for Face Recognition under Variable Lighting," To Appear in *IEEE Trans. Pattern Analysis and Machine Intelligence*.
4. Todd Zickler, Jeffrey Ho, David Kriegman, Jean Ponce, Peter Belhumeur, "Binocular Helmholtz Stereopsis", *International Conf. On Computer Vision*, 2003, pp. 1411-1417.
5. Jeffrey Ho, Ming-Hsuan Yang, Jongwoo Lim, Kuang-Chih Lee, David Kriegman, "Clustering Appearances of Objects Under Varying Illumination Conditions," *IEEE Conf. On Computer Vision and Pattern Recognition*, 2003, vol.1 , pp. 11-18.
6. Kuang-Chih Lee, Jeffrey Ho, Ming-Hsuan Yang, David Kriegman. " Video-Based Face Recognition Using Probabilistic Appearance Manifolds," *IEEE Conf. On Computer Vision and Pattern Recognition*, 2003, vol. 1, pp. 313-320.
7. Kuang-Chih Lee, Jeffrey Ho, David Kriegman,"Nine Points of Lights: Acquiring Subspaces for Face Recognition under Variable Illumination," *IEEE Conf. On Computer Vision and Pattern Recognition*, 2001, vol. 1, pp. 519-526.
8. Jeffrey Ho, Kuang-Chih Lee, David Kriegman, "On Reducing the Complexity of Illumination Cones," *IEEE Workshop on Identifying Objects Across Variations in Lighting: Psychophysics and Computation*, 2001, pp. 56-63.
9. Jeffrey Ho, Kuang-chih Lee, David Kriegman, "Compressing Large Polygonal Models," *IEEE Conference on Visualization*, 200, pp. 357-362.
10. Jeffrey Ho, Kuang-chih Lee, David Kriegman, "Compressing Large Polygonal Models," *SIGGRAPH* Technical Sketch, 2001, pp. 159.
11. Jeffrey Ho, "On the Quantum Cohomology of Fano Toric Manifolds and the Intersection Cohomology of Singular Symplectic Quotients," **Thesis**, University of Illinois, 1999.
12. Jeffrey Ho, "On the Intersection Cohomology of Singular Symplectic Quotients," Preprint, 1998.
13. Jeffrey Ho, "On the Quantum Cohomology of Fano Toric Manifolds", Preprint, 1997.

JOURNAL PAPERS IN PREPARATION

Kuang-chih Lee, Jeffrey Ho, Ming-Hsuan Yang, David Kriegman, "Visual Tracking and Face Recognition."

Jeffrey Ho, Kuang-chih Lee, David Kriegman, "Visual Tracking Using Uniform Reconstruction Error Norm."

Jeffrey Ho, Jongwoo Lim, Ming-Hsuan Yang, Kuang-chih Lee, David Kriegman, "Unsupervised Clustering of Images with Varying Illumination and Pose."

References

Prof. David Kriegman
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Prof. Jean Ponce
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Prof. Richard Bishop
Department of Mathematics
Univ. Illinois at Urbana-Champaign
1409 W. Green Street
Urbana, IL 61801
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Prof. Eugene Lerman
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