

Annie Hui

CONTACT INFORMATION

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Citizenship: Singaporean
US Visa: F1
US Work Visa Eligibility: H1B and H1B1
(under US-Singapore Free Trade Agreement)

INTERESTS

Solid Modeling for product design, simulation and CAD; Topology-based shape Modeling and understanding for Computer Graphics and Visualization; Optical Image Processing.

WORK EXPERIENCE **University of Maryland**, College Park, MD USA

Research Assistant

August, 2004 - present

- *Topological data structures:* Designed highly-compact representations for complex shapes, which support multi-resolution modeling.
- *Structure-based shape understanding:* Proposed a hierarchical description of object-topology based on sound decompositions of complex shapes for web searching.

Centre for Remote Imaging, Sensing and Processing, Singapore

Associate Scientist

February 2000 - July 2001

- *Optical feature extraction:* Detected road network from IKONOS and SPOT satellite images; built software for automated enumeration of palm trees using the curvature primal sketch at multiple resolutions.
- *Forest fires monitoring:* Detected forest fires in South East Asia using the SPOTS satellite images.

EDUCATION

University of Maryland, College Park, MD USA

Ph.D. Candidate, Computer Science (expected graduation date: Spring 2008)

- Dissertation Topic: “Representing and Understanding Non-Manifold Objects”
- Advisor: Leila De Floriani

M.S. Computer Science by coursework, GPA 3.8, December 2003

National University of Singapore, Republic of Singapore

M.S., Computer Science by research, November 2000

- Thesis Topic: “Mobile Robot Localization using Reference Images”
- Advisor: Kah-Kay Sung

B.S., Computer Science with honors, December 1998

- Major: Computer Vision

SELECTED PUBLICATIONS

1. L. De Floriani and A. Hui. Shape Representations Based on Simplicial and Cell Complexes. In *State-of-the-art Report, Eurographics 2007*, Prague, Czech Republic, September 2007.
2. A. Hui and L. De Floriani. A Two-level Topological Decomposition for Non-manifold Simplicial Shapes. In *Proceedings of Solid and Physical Modeling Symposium*, Beijing, China, June 2007. ACM Press.
3. L. De Floriani and A. Hui. A dimension-independent representation for multi-resolution non-manifold meshes. *Journal of Computing and Information Science in Engineering*, 7(1), March 2007.

4. L. De Floriani, A. Hui, and L. Papaleo. Topology-based reasoning on non-manifold shapes. In *Proceedings of the 1st International Symposium on Shapes and Semantics*, pages 23–30, Matsushima, Japan, June 2006.
5. A. Hui, L. Vaczlavik, and L. De Floriani. A decomposition-based representation for 3d simplicial complexes. In *Proceedings of the 4th Eurographics Symposium on Geometry Processing*, pages 101–110, Cagliari, Italy, June 2006.
6. L. De Floriani and A. Hui. Update operations on 3d simplicial decompositions of non-manifold objects. In *Proceedings of the 9th ACM Symposium on Solid Modeling and Applications*, pages 169–180. Genova, Italy, June 2004.
7. L. De Floriani and A. Hui. A scalable data structure for three-dimensional non-manifold objects. In *Symposium on Geometry Processing*, pages 72–82, Aachen, Germany, June 2003.
8. A. Hui, S. C. Liew, and L. K. Kwok. Extraction of linear features in multispectral imagery. In *Proceedings of International Symposium on Geoscience and Remote Sensing*, pages 2310–2312, volume 5, Sydney, Australia, July 2001.

COMPUTER SKILLS

- Solid Modeling Packages: Wings3D, Tetgen, some experience with Brldcad.
- Visualization Packages: GMV, some experience with Blender, Medit, graphviz.
- Scientific Computation Tools: Matlab, numerical recipes
- Languages: proficient in C, Latex and Unix scripting; familiar with C++, Java, Lisp, Perl.
- Operating Systems: Unix/Linux.
- Presentation Tools: expert at Powerpoint.

SELECTED TALKS GIVEN

- *A Decomposition-based Representation for 3D Simplicial Complexes*, 4th Eurographics Symposium on Geometry Processing, June 2006, Cagliari, Italy.
- *How to Represent Non-Manifold Objects Efficiently*, Graphics Lunch GVIL Graphics and Visual Informatics Laboratory, March 2006, University of Maryland at College Park.
- *A Scalable Data Structure for Three-dimensional Non-manifold Objects*, 1st ACM/Eurographics Symposium on Geometry Processing, June 2003, Aachen, Germany.

HOBBIES AND PERSONALITY

- Indoor: Hosting dinners, Cross-stitching.
- Outdoor: Hiking, Swimming, Traveling.
- Personality: Friendly but firm with principles, Strongly enjoy teamwork.
- Interpersonal skills: Excellent in verbal presentation and cross-cultural communication, Good team-player.

AWARDS

- University of Maryland, *Ann Wylie Dissertation Fellowship*, Fall 2007.
- Università degli Studi di Genova, Italy, *Research fellowship*, Springs of 2004, 2005, 2006.
- National University of Singapore, *Research scholarship for M.S*, 1999 - 2000.
- National University of Singapore, *Scholarship for B.S with honors*, 1998.