

Yao-Yi Chiang, Ph.D.

Information Sciences Institute and
Spatial Sciences Institute,
University of Southern California

4676 Admiralty Way, Suite 1001
Marina del Rey, CA 90292 U.S.A.

Office Phone: +1-310-448-9313

Fax: +1-310-822-0751

email: yaoyichi@isi.edu & yaoyichi@gmail.com

url: <http://www.yoyoi.info/>

Current Appointment

2011 – Pres. *Lecturer*
Spatial Sciences Institute
University of Southern California

2010 – Pres. *Postdoc Research Associate*
Information Sciences Institute
University of Southern California

Research Interests

My general area of research is information integration, with a focus on discovery, extraction, and fusion of spatiotemporal data from heterogeneous sources.

In particular, I am currently interested in geographic information integration (integrating spatial information in geographical space). For example, the techniques that integrate geographic data that are dynamically produced in urban areas from stationary sensors, mobile devices, people, and vehicles.

Education

2007 – 2010 Ph.D. in Computer Science, University of Southern California, USA

2003 – 2004 M.S. in Computer Science, University of Southern California, USA

1996 – 2000 B.B.A. in Information Management, National Taiwan University, Taiwan

Honors • Awards

- 2011 1st Place, Travel Scholarship Award, the First International Geospatial Geocoding Conference
- 2009 2nd Place, Best Paper Award, the Forth Annual Intelligent Systems Division Graduate Student Symposium, Information Sciences Institute
- 2008 2nd Place, Best Paper Award, the Third Annual Intelligent Systems Division Graduate Student Symposium, Information Sciences Institute
- 2007 – 2010 The Viterbi School Doctoral Fellowship, University of Southern California

PhD Thesis

- 2010 Chiang, Y.-Y. (2010). *Harvesting Geographic Features from Heterogeneous Raster Maps*. Ph.D. Dissertation, University of Southern California.

Publications

Journal Articles/Book Chapters

- 2011 Chiang, Y.-Y. and Knoblock, C. A. (2011). Recognizing Text in Raster Maps. Submit to *GeoInformatica*.
- Chiang, Y.-Y. and Knoblock, C. A. (2011). A General Approach for Extracting Road Vector Data from Raster Maps. *International Journal of Document Analysis and Recognition*.
- 2009 Chiang, Y.-Y. and Knoblock, C. A. (2009). Extracting road vector data from raster maps. In *Graphics Recognition: Achievements, Challenges, and Evolution, Selected Papers of the 8th International Workshop on Graphics Recognition (GREC), Lecture Notes in Computer Science, 6020*, pages 93–105, New York. Springer.
- Chiang, Y.-Y., Knoblock, C. A., Shahabi, C., and Chen, C.-C. (2009). Automatic and Accurate Extraction of Road Intersections from Raster Maps. *GeoInformatica*, 13(2):121–157.

Peer-Reviewed Conference/Workshop Articles

- 2011 Chiang, Y.-Y. and Knoblock, C. A. (2011). Recognition of Multi-Oriented, Multi-Sized, and Curved Text. In *Proceedings of the 11th International Conference on Document Analysis and Recognition*, pages 1399–1403.
- Chiang, Y.-Y. Leyk, Stefan, and Knoblock, C. A. (2011). Harvesting Cartographic Information from Historical Maps: Efficient User Intervention Strategy for Robust Graphics Recognition. In *Proceedings of the Ninth IAPR International Workshop on Graphics Recognition (GREC)*.

- 2010 Chiang, Y.-Y. and Knoblock, C. A. (2010). Strabo: A system for extracting road vector data from raster maps (demo paper). In *Proceedings of the 18th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, pages 544–545.
- Chiang, Y.-Y. and Knoblock, C. A. (2010). An approach for recognizing text labels in raster maps. In *Proceedings of the 20th International Conference on Pattern Recognition*, pages 3199–3202.
- Knoblock, C. A., Chen, C.-C., Chiang, Y.-Y., Goel, A., Michelson, M., and Shahabi, C. (2010). A general approach to discovering, registering, and extracting features from raster maps. In *Proceedings of the Conference on Document Recognition and Retrieval XVII of SPIE-IS&T Electronic Imaging*, volume 7534.
- 2009 Chiang, Y.-Y. and Knoblock, C. A. (2009). Classification of raster maps for automatic feature extraction. In *Proceedings of the 17th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, pages 138–147.
- Chiang, Y.-Y. and Knoblock, C. A. (2009). A method for automatically extracting road layers from raster maps. In *Proceedings of the Tenth International Conference on Document Analysis and Recognition*, pages 838–842.
- 2008 Chiang, Y.-Y. and Knoblock, C. A. (2008). Automatic extraction of road intersection position, connectivity, and orientations from raster maps. In *Proceedings of the 16th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, pages 1–10.
- 2006 Chiang, Y.-Y. and Knoblock, C. A. (2006). Classification of line and character pixels on raster maps using discrete cosine transformation coefficients and support vector machine. In *Proceedings of the 18th International Conference on Pattern Recognition*, pages 1034–1037.
- Shahabi, C., Chiang, Y.-Y., Chung, K., Huang, K.-C., Khoshgozaran-Haghighi, J., Knoblock, C. A., Lee, S. C., Neumann, U., Nevatia, R., Rihan, A., Thakkar, S., and You, S. (2006). GeoDec: Enabling geospatial decision making. In *IEEE International Conference on Multimedia & Expo*.
- 2005 Chiang, Y.-Y., Knoblock, C. A., and Chen, C.-C. (2005). Automatic extraction of road intersections from raster maps. In *Proceedings of the 13th ACM International Symposium on Advances in Geographic Information Systems*, pages 267–276.
- Desai, S., Knoblock, C. A., Chiang, Y.-Y., Desai, K., and Chen, C.-C. (2005). Automatically identifying and georeferencing street maps on the web. In *Proceedings of the 2nd International Workshop on Geographic Information Retrieval*, pages 35–38.
- 2004 Chen, C.-C., Knoblock, C. A., Shahabi, C., Chiang, Y.-Y., and Thakkar, S. (2004). Automatically and accurately conflating orthoimagery and street maps. In *The 12th ACM International Symposium on Advances in Geographic Information Systems*, pages 47–56.

Invited Lectures and Seminars

- 2011 “Harvesting Named Geographic Features from Raster Maps,” Chinese Academy of Sciences, China
“Harvesting Named Geographic Features from Raster Maps,” National Taiwan University, Taiwan
“Strabo: An Automatic Map Processing System,” Upjohn Center for the Study of Geographical, Western Michigan University, USA
- 2010 “Harvesting Geographic Features from Heterogeneous Raster Maps,” Academia Sinica, Taiwan
“Map Processing,” CSCI-548 Information Integration on the Web, Department of Computer Science, University of Southern California, USA
- 2009 “A General Method to Automatically Extracting Road Layers from Raster Maps,” Geosemble Technologies, USA
“Map and Imagery Fusion,” CSCI-548 Information Integration on the Web, Department of Computer Science, University of Southern California, USA
“Harvesting Geographic Features from Heterogeneous Raster Maps,” University of Lugano, Switzerland
- 2008 “Map Search and Extraction,” CSCI-548 Information Integration on the Web, Department of Computer Science, University of Southern California, USA
- 2007 “Automatic and Accurate Extraction of Road Intersections from Raster Maps,” National Taiwan University, Taiwan

Professional Experience

- 2007 – 2010 Graduate Research Assistant
Information Sciences Institute, University of Southern California
- 2007 Research Scientist
Fetch Technologies, USA
- 2006 – 2007 Research Scientist
Geosemble Technologies, USA
- 2005 – 2006 Research Scientist
Information Sciences Institute, University of Southern California
- 2004 – 2005 Graduate Research Assistant
Information Sciences Institute, University of Southern California
- 2002 – 2003 Software Engineer
TLJ Intertech, Taipei, Taiwan

Teaching Experience

- 2012 GIS Programming and Customization
Instructor, University of Southern California, Spring 2012
- 2011 Spatial Databases
Instructor, University of Southern California, Summer and Fall 2011
- Geospatial Data Integration
Taught jointly with Professor Craig A. Knoblock, University of Southern California, Spring 2011
- 2009 Information Integration on the Web
Teaching assistant under Professor Craig A. Knoblock, University of Southern California, Spring 2009

Patent

- 2010 System and Method for fusing Geospatial Data, Ching-Chien Chen, Craig A. Knoblock, Cyrus Shahabi, and Yao-Yi Chiang. US Patent No. 7660441

Service to the Profession

- Pres. I am a regular reviewer for GIS and computer science journals, including: International Journal of Geographical Information Science, Transactions in GIS, Journal of Spatial Information Science, International Journal of Pattern Recognition and Artificial Intelligence, and Journal of Zhejiang University.
- 2012 Program Committee Member, the First International Conference on Smart Systems, Devices and Technologies, Stuttgart, Germany, May, 2012
- 2012 Program Committee Member, the Twenty-Sixth Conference on Artificial Intelligence 2012 Special Track on AI and the Web (AIW), Toronto, Ontario, Canada, July, 2011
- 2011 Program Committee Member, the Ninth IAPR International Workshop on Graphics RECOgnition, Seoul, Korea, September, 2011
- Program Committee Member, the Twenty-Fifth Conference on Artificial Intelligence 2011 Special Track on AI and the Web (AIW), San Francisco, California, USA, August, 2011
- 2010 Program Committee Member, the First Workshop on Knowledge Engineering, Discovery and Dissemination in Health at IEEE International Conference on Bioinformatics & Biomedicine (BIBM-10), Hong Kong, China, December, 2010
- 2008 Organizer, the 3rd Annual Intelligent Systems Division Graduate Student Symposium, Information Sciences Institute, 2008
- Volunteer worker, the Information Sciences Institute, Intelligence Systems Division booth in the 2008 AAAI conference, 2008

Professional Society Memberships

Association for Computing Machinery

Institute of Electrical & Electronics Engineers

Association of American Geographers

International Association for Pattern Recognition TC-10 (Technical Committee on Graphics Recognition)

Language

English • Mandarin (native) • Taiwanese (native)