Tian Lan

Contact Information

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Simon Fraser University
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Research Interests

Computer Vision

- human activity recognition, video event understanding
- object detection, scene understanding
- image retrieval and ranking

Machine Learning

- max-margin learning
- structured prediction
- probabilistic graphical models

Education

Simon Fraser University, Burnaby, BC, Canada — 08/2013 (expected)

Ph.D. candidate in Computer Science
Advisor: Greg Mori

Simon Fraser University, Burnaby, BC, Canada — 08/2010

M.Sc. in Computer Science
Advisor: Greg Mori

Huazhong University of Science and Technology, Wuhan, China — 08/2008

B.E. in Electrical and Computer Engineering

Professional Experience

Simon Fraser University, Burnaby, BC, Canada
Research Assistant — 01/2009 - present

- Projects: Recognizing activities of groups of people; Event detection in surveillance videos (application: fall detection in nursing homes); Human action recognition and localization; Image retrieval using structured object queries; Automatic image tagging.
- *Advisor:* Greg Mori

Disney Research, Pittsburgh, PA, USA
Research Intern — 09/2012 - 12/2012

- Projects: Learning composite visual concepts for object detection.
- *Mentor:* Leonid Sigal

Disney Research, Pittsburgh, PA, USA
Research Intern — 04/2011 - 08/2011

- Projects: Activity hierarchies for broadcast sports video understanding.
- *Mentor:* Leonid Sigal

Huazhong University of Science and Technology, Wuhan, China
Undergraduate Research Assistant — 11/2007 - 12/2008

- Project: Medical Image segmentation using variational models.
- *Advisor:* Mingyue Ding

Avnet China, Wuhan, China
Intern 04/2007 - 07/2007

- Project: Development of an adaptive noise canceling system with FPGA.
- *Mentor:* Jinlin Zhang

Avnet China, Wuhan, China
Intern 07/2006 - 09/2006

- Project: An efficient FPGA implementation of Direct Digital Frequency Synthesizer (DDS).
- *Mentor:* Jinlin Zhang

Publications

Tian Lan and Greg Mori. A Max-Margin Riffled Independence Model for Image Tag Ranking. IEEE Computer Vision and Pattern Recognition (CVPR), 2013.

Guang-Tong Zhou, Tian Lan, Weilong Yang, and Greg Mori. Learning Class-to-Image Distance with Object Matchings. IEEE Computer Vision and Pattern Recognition (CVPR), 2013.

Yuke Zhu, Tian Lan, Yijian Yang, Steven Robinovitch, and Greg Mori. Latent Spatio-temporal Models for Action Localization and Recognition in Surveillance Video. IAPR International Conference on Machine Vision Applications (MVA), 2013. (oral)

Mani Ranjbar, Tian Lan, Yang Wang, Stephen Robinovitch and Greg Mori. Optimizing Non-Decomposable Loss Functions in Structured Prediction. IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI), 2012.

Tian Lan, Weilong Yang, Yang Wang, and Greg Mori. Image Retrieval with Structured Object Queries Using Latent Ranking SVM. European Conference on Computer Vision (ECCV), 2012.

Nataliya Shapovalova, Arash Vahdat, Kevin Cannons, Tian Lan, and Greg Mori. Similarity Constrained Latent Support Vector Machine: An Application to Weakly Supervised Action Classification. European Conference on Computer Vision (ECCV), 2012.

Tian Lan, Leonid Sigal, and Greg Mori. Social Roles in Hierarchical Models for Human Activity Recognition. IEEE Computer Vision and Pattern Recognition (CVPR), 2012.

Tian Lan, Yang Wang, Weilong Yang, Stephen Robinovitch, and Greg Mori. Discriminative Latent Models for Recognizing Contextual Group Activities. IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI), 2012.

Tian Lan, Yang Wang, and Greg Mori. Discriminative Figure-Centric Models for Joint Action Localization and Recognition. IEEE International Conference on Computer Vision (ICCV), 2011.

Tian Lan, Yang Wang, Weilong Yang, and Greg Mori. Beyond Actions: Discriminative Models for Contextual Group Activities. Neural Information Processing Systems (NIPS), 2010.

Tian Lan, Yang Wang, Greg Mori, and Stephen Robinovitch. Retrieving Actions in Group Contexts. International Workshop on Sign Gesture Activity (at ECCV), 2010.

Weilong Yang, Tian Lan, and Greg Mori. SFU at TRECVid 2009: Event Detection, TRECVID Workshop, 2009.

Tian Lan, Yangguang Sun, and Mingyue Ding. A fast quantum mechanics based contour extraction algorithm. SPIE Medical Imaging: Image Processing, 2009.

Yangguang Sun, Tian Lan, Xiaowei Fu, and Mingyue Ding. A statistical approach to contour extraction based on quantum mechanics. SPIE Medical Imaging: Image Processing, 2009.

Tian Lan and Jinlin Zhang. FPGA Implementation of an Adaptive Noise Canceler. International Symposium on Information Processing (ISIP), 2008.

Teaching Experience

Data Structures and Programming (CMPT 225), Simon Fraser University
Teaching Assistant with Prof. Greg Mori — Spring 2012

Selected Awards

Simon Fraser University Graduate Fellowship, 2009-2012

Ebco/Eppich Graduate Scholarships in Intelligent Systems, 2009-2011

Outstanding Undergraduate in Huazhong University of Science and Technology, 2008

Outstanding Bachelor's Dissertation Award in Huazhong University of Science and Technology, 2008

Professional Service

Reviewer

IEEE Transactions on Pattern Analysis and Machine Intelligence, T-PAMI 2012

IEEE Transactions on Systems, Man and Cybernetics Part C 2011

IEEE Transactions on Circuits and Systems for Video Technology 2011

Image and Vision Computing 2012

International Joint Conference on Artificial Intelligence, IJCAI 2013

International Conference on Pattern Recognition, ICPR 2012

Computer Skills

Programming Languages: C/C++, OpenCV, Matlab, Verilog HDL, VHDL

Operating Systems: Linux, Windows and Mac OS X

References

Available upon request