

Yi Li

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Education

- 2004-present **PH.D** student in Electrical and Computer Engineering, May 2010 (Expected)
University of Maryland, College Park, MD 20742
Dissertation Title: COGNITIVE ROBOTS FOR SOCIAL INTELLIGENCE
Supervised by: Prof. Yiannis Aloimonos and Dr. Cornelia Fermuller
- 2001-2004 **M.ENG** in Computer Science (First Rank), South China Univ. of Tech., China
- 1998-2001 **B.Sc** in Computer Science (First Honor), South China Univ. of Tech., China

Areas of Interest

Cognitive Robotics, Human Action Analysis, Computer Vision, Machine Learning, and Visual Illusions.

Awards & Honors

- 2008-present **FUTURE FACULTY FELLOW**, A. James Clark School of Engineering, **University of Maryland**
A fellowship program for preparing gifted graduate students for faculty positions at engineering schools.
- 2007 **SECOND PLACE** in the **First Semantic Robot Vision Challenge**, *AAAI 2007*, Vancouver, Canada
Sponsored by US National Science Foundation.
- 2006 **BEST STUDENT PAPER** in the *Intl. Conf. on Frontier in Handwriting Recognition (ICFHR) 2006*
Title: "A New Algorithm for Detecting Text Line in Handwritten Documents"

Research Experience

- 2007-present **RESEARCH ASSISTANT** in Computer Vision Lab at the **University of Maryland**
Cognitive robots for social interaction, including human action analysis in video and motion capture (MoCap) data, early vision, optimization, robotics, and active sensing;
Assessing human action for diagnosing neuron degenerative motion disorder, such as Parkinson's disease, Autism, and Children Developmental Disorder;
- 2004-2007 **RESEARCH ASSISTANT** in Language and Media Lab at the **University of Maryland**
Text line segmentation in freestyle documents;
Language identification and document image classification using shape descriptors.
- 2001-2004 **STUDENT TECHNICAL MEMBER** in **Huagong Tomorrow Co. Ltd.**, China
The patented pattern recognition product was awarded 3rd rank from the Province of Guangdong, China

Teaching Experience

- 2009 **CO-INSTRUCTOR**, *Introduction to Discrete Structures*
Introduction to basic concepts in computer science and electrical engineering: logic, circuits, elementary number theory, sets, combinations, relation, trees and graph algorithms.
- 2008 **Professional Training for Effective Teaching**, ENES 602, *Future Faculty Program II*
Basic principles of education and learning; Developing a course; Promoting active learning, problem solving and critical thinking; Designing syllabus, exam and assignments; Communicating effectively with students.

Publications & Talks

IN PREPARATION

- 2010a A. D'Ausilio, Y. Li, L. Fadiga, and Y. Aloimonos, "Coordinated Actions in Music", In preparation for *Science Mag.*
- 2009b —, "Illusory lightness perception due to signal compression and reconstruction", In preparation for *Proc. of National Academy of Science (PNAS)*.

2009a Y. Li, M. Nishigaki, K. Bitsakos, C. Fermuller and Y. Aloimonos, “A Cognitive Robot for Intelligent Service”, In preparation for *Intl. J. of Robot. Res. (IJRR)*.

UNDER REVIEW

J.1 Y. Li, C. Fermuller and Y. Aloimonos, “Learning Shift-Invariant Sparse Representation of Actions”, Submitted to *J. Machine Learning and Res. (JMLR)*

C.2 Y. Li, C. Fermuller, and Y. Aloimonos, “Detecting Discontinuity in Human Movement for Action Representation and Recognition”, Submitted to *European Conference on Computer Vision (ECCV) 2010*.

C.1 Y. Li, A. D’Ausilio, L. Fadiga, C. Fermuller, and Y. Aloimonos, “A Causality Network of Coordinated Actions”, Submitted to *Twenty-Fourth AAAI Conference on Artificial Intelligence (AAAI) 2010*.

JOURNAL ARTICLES

[12] G. Zhu, X. Yu, Y. Li, and D. Doermann, “Language Identification for Handwritten Document Images Using A Shape Codebook”, *Pattern Recognition (PR)*, 2008.

[11] Y. Li, Y. Zheng, D. Doerman, and S. Jaeger, “Script-Independent Text Line Segmentation in Freestyle Handwritten Documents”, *IEEE Trans. Pattern Anal. Machine Intell. (T-PAMI)*, vol. 30, no. 8, pp. 1313-1329, August, 2008.

[10] Y. Li, Z. Wang, and H. Zeng, “Correlation Filter: An Accurate Approach to Detect and Locate Low Contrast Character Strings In Complex Table Environment”, *IEEE Trans. Pattern Anal. Machine Intell. (T-PAMI)*, vol. 26, no. 12, pp. 1639-1644, December, 2004.

CONFERENCE PAPERS

[9] Y. Li, C. Fermuller, and Y. Aloimonos, “Learning Shift-Invariant Sparse Representation of Actions”, To appear in *Computer Vision and Pattern Recognition (CVPR) 2010*.

[8] Y. Li, C. Fermuller and Y. Aloimonos, “Illusory lightness perception due to signal compression and reconstruction”, To appear in *Vision Science Society (VSS) Conference 2010*.

[7] Y. Li, K. Bitsakos, C. Fermuller, and Y. Aloimonos, “Real-Time Shape Retrieval for Robotics Using Skip Tri-Grams”, In Proc. of *Intl. Conf. on Intell. Robots and Sys. (IROS) 2009*.

[6] G. Zhu, X. Yu, Y. Li and D. Doermann, “Learning Visual Shape Lexicon for Document Image Content Recognition”, In Proc. of *European Conf. on Computer Vision (ECCV) 2008*, pp. 745-758.

[5] Y. Li and D. Jacobs, “Efficiently Determining Silhouette Consistency”, In Proc. of *Computer Vision and Pattern Recognition (CVPR) 2007*.

[4] X. Yu, Y. Li, C. Fermuller, and D. Doermann, “Object Detection Using A Shape Codebook”, In Proc. of *British Machine Vision Conference (BMVC) 2007*.

[3] K. Bitsakos, Y. Li, and C. Fermuller, “Combining Motion from Texture and Lines for Visual Navigation”, In Proc. of *Intl. Conf. on Intell. Robots and Sys. (IROS) 2007*, pp. 232-239.

[2] Y. Li, Y. Zheng and D. Doermann, “Detecting Text Line in Handwritten Documents”. In Proc. of *Intl. Conf. on Pattern Recognition (ICPR) 2006*, pp 1030-1033.

[1] Y. Li, Z. Wang, and H. Zeng, “String Extraction From Color Airline Coupon Image Using Statistical Approach”, In Proc. of *Intl. Conf. on Doc. Anal. and Rec. (ICDAR) 2003*, pp. 289-294.

SELECTED TALKS

2009c “Learning Shift-invariant Sparse Representation of Action”, Annual Meeting of the European Project “POETI-CON” at *Institute for Language and Speech Processing (ILSP)*, Athens, Greece.

2009b “Google Vision vs. Robot Vision”, *Intl. Conf. on Intell. Robots and Sys. (IROS) 2009*, St. Louis, MO.

2009a Dialogue between Y. Li and Y. Aloimonos, “Social Signal Processing: A Visual Dialogue” at *Social Signal Processing Workshop, Intl. Conf. on Affective Computing (ACII) 2009*, Amsterdam, the Netherlands.

Professional Activities

REVIEW ACTIVITIES

- JOURNAL *IEEE Trans. Pattern Anal. Machine Intell., Intl. J. of Humanoid Robotics, Comput. Vis. and Image Understanding and Pattern Recognition*
- CONFERENCE *Computer Vision and Pattern Recognition, Intl. Conf. on Computer Vision, Intl. Conf. on Pattern Recognition, Intl. Conf. on Doc. Anal. and Rec., and IEEE Workshop on Applications of Computer Vision*

References

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| YIANNIS ALOIMONOS
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