

# Wen Wu

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**Objective:** A R&D position that requires machine learning, data mining, computer vision, or video processing skills

## Education

**Carnegie Mellon University**, School of Computer Science, Pittsburgh, PA, USA

PhD in Language and Information Technologies, Cumulative QPA: 3.71/4.0

PhD Thesis: Multimedia Technologies for Landmark-Based Vehicle Navigation

MS in Language Technologies, Cumulative QPA: 3.83/4.0

*expected: Sep 2009*

advisor: Jie Yang

*May 2005*

**National University of Singapore**, Singapore

MS in Computer Science

MS Thesis: A Maximal-Figure-of-Merit Learning Approach to Text Categorization

advisors: Chin-Hui Lee, Tat-Seng Chua

*Jan 2003*

**Tsinghua University**, Beijing, China

BE in Computer Science and Technology

*Jul 2001*

## Work and Project Experience

**Carnegie Mellon University**

Pittsburgh, PA, US

Graduate Research Assistant

**Landmark-Based Vehicle Navigation Using a Full-Windshield Display (FWD)\*<sup>13</sup>**

*2008*

Proposed an automated and fast method for correcting non-planar windshield distortion for a FWD system

Demonstrated landmark-based navigation (e.g. highlighting landmarks for maneuvers) on the car windshield

**Fast Food Image Database Collection and Recognition for Obesity Research\*<sup>2</sup>**

*2008*

Co-designed and implemented a data collection of 101 fast foods from over 10 different food restaurants

Demonstrated the benefits of this fast food database for obesity research using vision algorithms

**Recognizing Landmarks and City buildings**

*2008-2009*

Proposed a new recognition method to identify landmarks via keypoint matching and merging re-ranking results

**Object Fingerprints for Multimedia Content Analysis**

*2007, 2008*

Proposed a method to extract object fingerprints and applied the new method to street landmark localization

**Semi-Automatically Labeling Objects in Images**

*2005, 2006, 2008*

Developed a semi-supervised learning-based approach for labeling objects in images with small human input

**Discovering Leadership Roles in Email Workgroups\*<sup>3</sup>**

*2005*

Proposed a method to infer leadership roles from a collection of emails exchanged among class team members

**Detection of Text on Road Signs from Videos**

*2003, 2004*

Developed a robust system for incrementally detecting text on road signs from video

**Teaching Assistant**, 15-384 Robot Manipulation

*Fall 2006*

Jobs\*<sup>3</sup>: designed the tournament project and organized demos, held office hours, graded homeworks/exams

**General Motors R&D Lab in Applied Minds Inc**, Glendale, CA, US, Summer Intern

*2006*

Applied the story-based design for building context-sensitive point of interest recommenders for Cadillac

Assisted the Applied Minds Next Generation Navigation and Infotainment Human Machine Interface Project

**National University of Singapore**, Graduate Research Assistant

*2001, 2003*

Proposed a performance metric driven classifier learning framework that outperforms SVM on Reuters-21578\*<sup>4</sup>

**Microsoft Research Asia**, Beijing, China, Visiting Student

*2000*

Studied the problem of automatic generation of cartoon sketch from real images using the morphing technique

## Fellowships and Awards

Carnegie Mellon University Research Fellowship

*Jun 2003-Present*

National University of Singapore Research Scholarship

*Jul 2001-Jan 2003*

Chinese Academy of Sciences Scholarship for Outstanding Science Students

*1999*

Tsinghua University Scholarship for Outstanding Undergraduates

*1998*

## Journal Papers

- [1] Wen Wu and Jie Yang. **Semi-Automatically Labeling Objects in Images**, In *IEEE Transactions on Image Processing*, Vol. 18, No. 6, Jun 2009.
- [2] Sheng Gao, Wen Wu, Chin-Hui Lee and Tat-Seng Chua. **A Maximal Figure-of-Merit Learning Approach to Robust Classifier Design for Text Categorization**. In *ACM Trans. on Info. Systems*, Vol. 24, No. 2, Apr 2006.
- [3] Wen Wu, Xilin Chen and Jie Yang. **Detection of Text on Road Signs from Video**. In *IEEE Transactions on Intelligent Transportation Systems*, Vol. 6, No.4, Dec 2005.

## Conference and Workshop Papers

- [4] Wen Wu, Fabian Blaicher, Jie Yang, Thomas Seder and Dehua Cui. **A Prototype of Landmark-Based Car Navigation Using a Full-Windshield Head-Up Display System**. In *ACM Intl. Conference on Multimedia - Workshop on Ambient Media Computing*, Beijing, China, October 2009.
- [5] Mei Chen, Kapil Dev Dhingra, Wen Wu, Lei Yang, Rahul Sukthankar and Jie Yang. **PFID: Pittsburgh Fast-Food Image Dataset**. In *IEEE Intl. Conf. on Image Processing (ICIP)*, Cairo, Egypt, November 2009.
- [6] Wen Wu and Jie Yang. **Fast Food Recognition from Videos of Eating for Calorie Estimation**. In *IEEE International Conference on Multimedia & Expo (ICME)*, New York City, USA, June 2009
- [7] Wen Wu and Jie Yang. **Object Fingerprints for Content Analysis with Applications to Street Landmark Localization**. In *ACM Intl. Conference on Multimedia*, Vancouver, Canada, October 2008.
- [8] Wen Wu and Jie Yang. **Semi-Supervised Learning of Object Categories from Paired Local Features**. In *ACM Image and Video Retrieval*, Niagara Falls, Canada, July 2008.
- [9] Vitor R. Carvalho, Wen Wu and William W. Cohen. **Discovering Leadership Roles in Email Workgroups**. In *Fourth Conference on Email and Anti-Spam*, Mountain View, California USA, August 2007.
- [10] Wen Wu and Jie Yang. **SmartLabel: An Object Labeling Tool Using Iterated Harmonic Energy Minimization**. In *ACM Intl. Conference on Multimedia*, Santa Barbara, California USA, October 2006.
- [11] Wen Wu, Jie Yang and Jing Zhang. **A Multimedia System for Route Sharing and Video-based Navigation**. In *IEEE International Conference on Multimedia & Expo*, Toronto, Canada, July 2006.
- [12] Wen Wu, Datong Chen and Jie Yang. **Integrating Co-training and Recognition for Text Detection**. In *IEEE Intl. Conference on Multimedia & Expo*, Amsterdam, The Netherlands, July 2005.
- [13] Wen Wu, Xilin Chen and Jie Yang. **Incremental Detection of Text on Road Signs from Video with Application to a Driving Assistant System**. In *ACM Intl. Conf. on Multimedia*, New York, USA, October 2004.
- [14] Sheng Gao, Wen Wu, Chin-Hui Lee and Tat-Seng Chua. **An MFoM Learning Approach to Robust Multiclass Multi-Label Text Categorization**. In *21<sup>st</sup> Intl. Conf. on Machine Learning*, Banff, Canada, Jul 2004.
- [15] Sheng Gao, Wen Wu, Chin-Hui Lee and Tat-Seng Chua. **A Maximal-Figure-of-Merit Learning Approach to Text Categorization**. In *26<sup>th</sup> Annual International ACM SIGIR Conference*, Toronto, Canada, July 2003.

## Submitted or Working Papers

- [16] **Learning to Recognize Landmark Buildings in Diverse Views**, Wen Wu and Jie Yang. *To submit*, 2009.

## Selected Courses

Information Retrieval by Jamie Callan, Yiming Yang	Language & Statistics by Roni Rosenfeld
Computer Vision by Martial Hebert	Statistical Machine Learning by John Lafferty, Larry Wasserman
Structure of Information Networks by Jon Kleinberg	Grammars & Lexicons by Lori Levin, Teruko Mitamura
Adv. Statistics Learning Seminar by Yiming Yang	Project Dialog Systems by Alex Rudnicky, Alan W Black

## Skills

**Know:** C/C++, Matlab, VB, Java, R, CGI, Perl, XML, HTML, SQL, Intel OpenCV, MS MapPoint, MS SAPI

## Memberships and Services

**Member of** ACM, IEEE, CMU Multicultural Book Club, Language Technologies Institute Student Activity Committee  
**Reviewer for** the journals and conferences: IJCV, IEEE ITS, ICCV, CVPR, ACCV, ICIP, ICPR, etc

References available upon request