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# ZHONGHAI LI, Ph.D.

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## EDUCATION

**Ph.D. in Human Factors Engineering** • 2006 • Department of Mechanical and Industrial Engineering, University of Toronto

**MMSE (Master of Management Science and Engineering) in Human Factors Engineering** • 2001 • School of Management, Huazhong University of Science & Technology (Wuhan, China)

**B. Eng. in Electronic & Information Engineering** • 1998 • Department of Electronic & Information Engineering, Huazhong University of Science & Technology (Wuhan, China)

**B.Ec. in Finance (Double Degree)** • 1998 • School of Management, Huazhong University of Science & Technology (Wuhan, China)

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## EXPERIENCE

**Research Scientist in Human Factors Engineering** • 2007 – Present • Insurance Institute for Highway Safety, Arlington VA, USA

**Postdoctoral Fellow in Human Factors Engineering** • 2006 – 2007 • Intelligent Assistive Technology and Systems Lab, Department of Occupational Science & Occupational Therapy, University of Toronto (Supervisor: Prof. Alex Mihailidis)

**Human Factors Consultant (part-time)** • 2006 • Humansystems Inc. (Guelph, ON, Canada)

**Research Assistant** • 2001-2006 • Ergonomics in Teleoperation and Control Lab, Department of Mechanical and Industrial Engineering, University of Toronto (Supervisor: Prof. Paul Milgram)

**Teaching Assistant** • 2002-2006 • Department of Mechanical & Industrial Engineering, University of Toronto

**Research Assistant & Human Factors Consultant** • 1998-2001 • Management Skills and Human Performance Laboratory, School of Management, Huazhong University of Science & Technology (Wuhan, China) (Supervisor: Prof. Jianqiao Liao)

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## AWARDS/SCHOLARSHIPS

**Student Research Award**, Perception and Performance Technical Group of the Human Factors and Ergonomics Society (HFES) (2005)

**Best Student Paper Award**, Surface Transportation Technical Group of the Human Factors and Ergonomics Society (HFES) (2005)

**Precarn Scholarship**, Institute for Robotics and Intelligent Systems (IRIS) (2002, 2003, 2004)

**University of Toronto Graduate Fellowship**, University of Toronto (2001, 2003, 2004)

**International Recruitment Award**, University of Toronto (2001, 2002, 2003, 2004)

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## **PROFESSIONAL MEMBERSHIPS**

Human Factors and Ergonomics Society (HFES)

Usability Professional Association (UPA)

Association for Computing Machinery, Special Interest Group on Computer-Human Interaction (ACM SIGCHI)

IEEE Systems, Man & Cybernetics Society (SMCS)

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## **TA COURSES**

2002-2005 • MIE448: Engineering Psychology and Human Performance • Course Instructor: Prof. Paul Milgram

2006 • MIE344: Ergonomic Design of Information Systems • Course Instructor: Prof. Mark Chignell

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## **UNDERGRADUATE THESIS SUPERVISION**

Christopher Rampaul & Angela Sy (2005) An Experimental Investigation of the Optical Looming Cue in Perception of Time-to-Collision, Department of Mechanical and Industrial Engineering, University of Toronto

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## **PROFESSIONAL TRAINING**

**TATP (Teaching Assistant's Training Program) Certificate**, University of Toronto (2006)

**Introduction to IPME** (Integrated Performance Modelling Environment), training course provided by Humansystems Inc., 2006

**Introduction to Project Management**, training course provided by Humansystems Inc., 2006

**Human Performance Modeling as a Tool for Human Factors Analysis**, workshop provided by Micro Analysis & Design Inc. in Human Factors and Ergonomics Society 49th Annual Meeting (2005).

**Sound/Noise Measurement Basics with Specific Application to Human Factors Research and Practice**, workshop in Human Factors and Ergonomics Society 48th Annual Meeting (2004).

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## **SELECTED PUBLICATIONS**

### **Book Chapter**

Li, Z. (2006). Design of information display. In J. Liao (Eds), Human factors engineering. Beijing, China: Chinese Higher Education Press.

### **Peer-Reviewed Journal Articles**

- Li, Z. & Milgram, P. (in preparation). An empirical investigation of the effect of display gain manipulation on braking behavior in a simulated driving task, to be submitted to *Journal of Experimental Psychology: Human Perception and Performance*.
- Li, Z. & Milgram, P. (in preparation). An empirical investigation of the effect of looming cues manipulation on braking behavior in a simulated driving task, to be submitted to *Human Factors*.
- Li, Z. & Milgram, P. (in press). An empirical investigation of a dynamic brake light concept for reduction of rear-end collision through manipulation of optical looming, *The International Journal of Human-Computer Studies*.
- Li, Z., Liao, J., Xiao, H. (2002). A human factors analysis of Chinese internet retail store design. *Human Factors (Chinese)*, 8(4), 43-45.
- Li, Z., Liao, J. (2001). Work stress management in modern enterprises. *Industrial Engineering (Chinese)*, 1, 11-15.
- Li, Z., Liao, J. (2000). The influence of electric power market on management of electric power enterprises. *Electric Power of China*, 33(11), 72-75.
- Liao, J, Li, Z, Wang, W, Yuan, Z (2000). An experimental study of napping's effects on human performance in the afternoon and in the evening", *Ergonomics (Chinese)*, 6(3), 29-32.
- Liao, J., Xu, Q., Yuan, Z., Wu, T., Li, Z. (2000). A study on the popularity and reasons of napping in China. *Ergonomics (Chinese)*, 6(2), 16-19.

#### **Peer-Reviewed Conference Proceedings Articles**

- Li, Z, Mihailidis, A., Boger, J. (2007). The usability of water faucets for older adults with and without dementia: how important is familiarity? *The 2nd International Conference on Technology and Aging (ICTA)*, Toronto.
- Li, Z. & Milgram, P. (2005). An investigation of the potential to influence braking behaviour through manipulation of optical looming cues in a simulated driving task. In *Proc of 49th Ann Mtg of Human Factors and Ergonomics Society*. Orlando, Florida. pp. 1540-1544.  
**\*(Winner of Surface Transportation Technical Group Best Student Paper Award)**
- Li, Z. & Milgram, P. (2005). An empirical investigation of a dynamic brake light concept for reduction of rear-ends collision accidents during emergency braking. In *Proc of 49th Ann Mtg of Human Factors and Ergonomics Society*. Orlando, Florida. pp. 1940-1944.  
**\*(Winner of Perception and Performance Technical Group Student Research Award)**
- Li, Z. & Milgram, P. (2004). An empirical investigation of the influence of perception of time-to-collision on gap control in automobile driving. In *Proc. of 48th Ann Mtg of Human Factors and Ergonomics Society*. New Orleans, Louisiana. pp. 2271-2275.
- Li, Z. & Milgram, P. (2004). Manipulating optical looming to influence perception of time-to-collision and its application in automobile driving. In *Proc. of 48th Ann Mtg of Human Factors and Ergonomics Society*. New Orleans, Louisiana. pp. 1900-1904.

#### **Unpublished Doctoral Dissertation & Master's Thesis**

- Li, Z. (2006). An Empirical Investigation of the Effect of Manipulating Optical Looming Cues on Braking Behaviour in a Simulated Automobile Driving Task. Unpublished doctoral dissertation, University of Toronto.

Li, Z. (2001). A Human Factors Analysis & Usability Evaluation of User Interface Design of E-commerce Websites. Unpublished master's thesis, Huazhong University of Science and Technology, China.

#### **Non-Peer Reviewed Conference Presentation/Poster/Demo**

Li, Z., & Milgram, P. (2005) "Empirical investigation of effect of optical looming cue manipulation on braking behaviour in a simulated automobile driving task" (Poster), 15<sup>th</sup> Annual Canadian Conference on Intelligent Systems. Quebec City, Quebec.

Li, Z., Milgram, P., Frost, B. (2004) "Manipulation of perception of time-to-collision with leading vehicle in a driving simulator" (Demo), 14<sup>th</sup> Annual Canadian Conference on Intelligent Systems. Ottawa, Ontario.

Li Z., Milgram, P., Frost, B. (2004) "Braking behaviour during car following in a driving simulator: Effect of Tau manipulation on perception of time-to-collision" (Poster), 14<sup>th</sup> Annual Canadian Conference on Intelligent Systems. Ottawa, Ontario.

Li, Z. (2004) "Perception of time-to-collision in goal-directed action and sport" (Presentation), Building Bridges - An Inter- and Multi-Disciplinary Conference at Graduate Student Research Conf in Kinesiology, Physical Education and Health, University of Toronto.

Li, Z. (2003) "Visual control of braking in a driving simulator: Evidence for Tau margin" (Presentation), 4<sup>th</sup> Annual Inter-University Human Factors Workshop, University of Toronto.

Li, Z. (2003) "Dynamic manipulation of perception of contact with leading automobiles through control of optical looming cues" (Poster). 13<sup>th</sup> Annual Canadian Conference on Intelligent Systems. Halifax, Nova Scotia.

#### **Technical Reports**

Li, Z. (2006). The Impact of Familiarity on the Usability of Innovative Products by Older Adults with Cognitive Impairment. Research proposal, Intelligent Assistive Technology and Systems Lab.

Li, Z. (2006). Use of Driving Simulators for Test & Evaluation before Road Construction, Internal R&D Project, Humansystem Inc. Ontario.

Handyside, J., Li, Z. (2006). Usability Evaluation of Telemetry Cardiac Monitor System, consulting project for Sunnybrook Health Sciences Centre, Toronto.

Handyside, J. Li, Z. (2006). Human Factors Review of the Total Parenteral Nutrition (TPN) Process, consulting project for the Hospital for Sick Children, Toronto.

Lamoureux, T.M., Bandali, F., Bruyn Martin, L.M. & Li, Z. (2006) Military Information Aggregation, consulting project for Defence Research & Development Canada (DRDC), Toronto.

Lamoureux, T.M., Bandali, F., Bruyn Martin, L.M. & Li, Z. (2006) Team Modelling: Review of Experimental Scenarios and Computational Models, consulting project for Defence Research & Development Canada (DRDC), Toronto.

Liao, J., Li, Z., et al., (2001). Job design and motivational inducement system in public service sector, consulting project for Government of Zhejiang Province, China.

Liao, J., Li, Z., et al., (2001). Establishment of employee performance evaluation system in Chutian Medical Equipment Inc., consulting project for Chutian Medical Equipment Inc., China

Liao, J., Li, Z., et al., (2001). Establishment of modern management system in Chuangyi Company, consulting project for Shenzhen Chuangyi Company., China

Liao, J., Wu, T., Li, Z. (1999). Job analysis and job design in Reads Hearts K Group, consulting project for Reads Hearts K Group., China

Liao, J., Wu, T., Li, Z. (1999). Design of organizational structure in Tefeng Pharmacy Inc., consulting project for Tefeng Pharmacy Inc., China

#### **Newsletter Article**

Li, Z., (2005) Human Factors: Just Common Sense? *Insight, the Perception and Performance Technical Group Newsletter*, Santa Monica, CA: Human Factors and Ergonomics Society, 27(2) pp.6

#### **Invited Presentation**

Li, Z. (2003). "Human Factors: Making a safer and better world", In "*Challenges in the New Millennium*", *Conference for Gifted High School Students*. University of Toronto.

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## **MEDIA COVERAGE**

**New Scientist**, "Tail lights grow in the dark", March 8, 2007 (Paul Marks)

**Discovery Channel**, "Bigger taillights improves road safety at night: study", March 8, 2007 (Brian Jackson)

**The Daily Telegraph**, "Sensitive tail lights could put brake on rear-end collisions", March 8, 2007 (Roger Highfield)

**Perth's Newstalk 882 6PR**, radio interview with Prof. Paul Milgram in relation to the dynamic brake lights concept, March 14, 2007 ("Nightline" with Graham Mabury)

**University of Toronto Homepage News**, "New brake light system could mean fewer collisions", March 23, 2007 (Sonnet L'Abbé)

**The Varsity, University of Toronto**, "When disaster looms", March 26, 2007 (Elvis Cela)

**The Bulletin, University of Toronto**, "New brake light system could mean fewer collisions", March 27, 2007 (Sonnet L'Abbé)

**Daily Newspaper of Science and Technology** (Chinese), "Canada has designed dynamic brake lights whose size can be reduced or enlarged", April 1, 2007 (Huabing Du)

**University of Toronto Magazine**, "Braking News", summer 2007 (Graham F. Scott)

**YES Magazine**, "Stop, stop, stop, and read this", July/August 2007 (Kathiann M. Kowalski)

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## **PROFESSIONAL, ACADEMIC AND ADMINISTRATIVE SERVICE**

**Technical Manager** (Part-time) • 2002 – 2007 • Translucent Technologies Inc. Toronto, ON

**Secretary (elected) and Webmaster** • 2002 – 2004 • Human Factors Interest Group, Student Chapter of Human Factors and Ergonomics Society (HFES), University of Toronto

**Conference Volunteer** • 2002, 2003, 2004, 2005 • 46<sup>th</sup>, 47<sup>th</sup>, 48<sup>th</sup>, 49<sup>th</sup> HFES Annual Meeting

## **REFERENCES AVAILABLE UPON REQUEST**