

# Resume



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## Educational Background

- Sep.2002—July 2006: Electronic Engineer department, School of Electronic and Information Engineering, Beijing Jiaotong University, **Bachelor degree**. Major: IC design engineering.
- Sep.2006—July 2008: Electronic Engineer department, School of Electronic and Information Engineering, Beijing Jiaotong University, **Master degree**. Major: EDA software design.
- Sep.2008—Dec. 2014: School of Computer and Information Technology, Beijing Jiaotong University, **PhD degree**. Research interest: computational imaging and inverse problems in imaging.
- Jan. 2015—Now: CSAIL, MIT. **Pos-doc Associate**. Research interest: machine vision, computational imaging, self-driving cars. Supervisor: Prof. Berthold Horn (<http://people.csail.mit.edu/bkph/>).

## International Exchange

- Sep. 2011—March 2013: Math department, MIT. **Exchange PhD student** Research interests: inverse problems and machine vision. Supervisor: Prof. Gilbert Strang (<http://www-math.mit.edu/~gs/>).

## Awards

- JingDongFang Scholarship: Beijing Jiaotong University. In 2006
- Chinese Mathematical Modeling Competition (graduate-students group): The Chinese Mathematical Society. In 2006 and 2007
- International Mathematical Modeling (ICM) Competition: American Mathematical Society. In 2003, 2004 and 2005.
- Chinese Mathematical Modeling Competition (undergraduate-students group), Beijing: The Chinese Mathematical Society. In 2002 and 2003.
- First-class Scholarship in Scientific Research: Beijing Jiaotong University. 2003

## Projects experiences

- “Driver-Friendly bilateral control for suppressing traffic instabilities”, sponsor: CSAIL-Toyota Joint Research Center, principal investigator: Prof. Berthold K. P. Horn. (MIT)
- “Distance measurement from two blurry images in two defocused image planes”, sponsor: Xerox (America), interim principal investigator: Prof. Berthold K. P. Horn. (MIT)
- “Divert and alert”, sponsor: National Institute of Justice (America), interim principal investigator: Prof. Seth Teller. (MIT)
- Railway environment danger detection model Based on high speed forward motion video, National Science Foundation of China (61272354)
- Neural computation model of Visual perception, National Science Foundation of China (60773016)

## SCI Journal Papers (First Author)

- [1] Liang Wang and Berthold K. P. Horn. “Machine Vision to Alert Roadside Personnel of Night Traffic Threats.” IEEE Transactions on Intelligent Transportation Systems (Early Access <https://ieeexplore.ieee.org/document/8194860/>)
- [2] Liang Wang, Berthold K. P. Horn and Gilbert Strang. “Eigenvalue and Eigenvector Analysis of Stability for a Line of Traffic.” Studies in Applied Mathematics, 2017, 138(1): 103-132.
- [3] Liang Wang, Yaping Huang, Xiaoyue Luo, Zhe Wang, and Siwei Luo. “Image deblurring with filters learned by extreme learning machine.” Neurocomputing 74, no. 16 (2011): 2464-2474.
- [4] Berthold K.P. Horn and Liang Wang. “Wave Equation of Suppressed Traffic Flow Instabilities. ” IEEE Transactions on Intelligent Transportation Systems. (Early Access <https://ieeexplore.ieee.org/document/8166801/>)
- [5] Liang Wang and Berthold K. P. Horn. “Multi-node bilateral control model.” IEEE Transactions on Automatic Control (Third Revision),
- [6] Liang Wang and Berthold K. P. Horn. “On the stability analysis of mixed traffic with vehicles under car-following and bilateral control.” IEEE Transactions on Automatic Control (First revision)
- [7] Liang Wang and Berthold K. P. Horn. “On the chain stability of bilateral control model.” IEEE Transactions on Automatic Control (Under review)
- [8] Liang Wang and Berthold K. P. Horn. “Twisted Pascal Triangle and Recursive

Polynomials.” The American Mathematical Monthly. (Under review)

### **EI Conference Papers (First Author)**

- [1] Liang Wang, Siwei Luo, Zhe Wang. Image deblur with regularized backward heat diffusion, 2010 IEEE International Conference on Image Processing (ICIP2010), Page(s):1141 - 1144, 2010. (EI, ISTP)
- [2] Liang Wang, Yaping Hang, Siwei Luo, Xiaoyue Luo, and Xinlan Jiang. “Deblurring Gaussian-blur images: A preprocessing for rail head surface defect detection.” In Service Operations, Logistics, and Informatics (SOLI), 2011 IEEE International Conference on, pp. 451-456. IEEE, 2011. (EI, ISTP)
- [3] Liang Wang, Xiaoyue Luo, Berthold K. P. Horn, and Shengchun Wang, Detect the Rail Track Flaw by Estimating the Camera Shaking, 17th International IEEE Conference on Intelligent Transportation Systems. (EI, ISTP)
- [4] Wang, Liang, and Berthold KP Horn. "Time-to-Contact control for safety and reliability of self-driving cars." Smart Cities Conference (ISC2), 2017 International. IEEE, 2017. (EI, ISTP)

### **Books**

- 《基于MATLAB的线性代数实用教程》(Learning Linear Algebra by Using MATLAB). Authors: 王亮(Liang Wang), 冯国臣(Guochen Feng) and 王兵团(Bingtuan Wang). Published by: 科学出版社(Science Press). 2008
- 《机器视觉》(Robot Vision). Author: Berthold Klaus Paul Horn. Translated by: 王亮(Liang Wang) and 蒋欣兰(Xinlan Jiang). Published by: 中国青年出版社(Chinese Youth Press). 2014
- 《线性代数引论》(Introduction to Linear Algebra). Author: Gilbert Strang. Translated by: 张全兴(Quanxin Zhang) and 王亮(Liang Wang). Published by: 高等教育出版社(Higher Education Press). 2018 (in process and will be published on Dec. 2018)

### **Basic skill**

Diligent work with team spirit; Coding skill; Good bedrock on mathematics