

Jing Li

CONTACT INFORMATION	MSEE 357, 465 Northwestern Avenue, West Lafayette, IN 47907	Phone: (765)476-3344 Email: jingli@purdue.edu Homepage: engineering.purdue.edu/people/jing.li.21
EDUCATION	Purdue University , West Lafayette, IN <i>Ph.D. student in Electrical and Computer Engineering(GPA: 4.0/4.0)</i> Fall 2018 Xi'an Jiaotong University , Xi'an, China <i>M.S. in Electrical and Computer Engineering(GPA: 3.8/4.0)</i> July 2013 <i>B.A. in Japanese(GPA: 90.2/100)</i> July 2010 <i>Minor in Finance Engineering(GPA: 87.0/100)</i> July 2010	
SKILLS	Programming: Python, C++, Java, C, Matlab Research Area : Computer Vision, Image Processing Algorithms, Computational Imaging, Model Based Image Reconstruction, Machine Learning Algorithms	
RESEARCH EXPERIENCE	Purdue University <i>Graduate Research Assistant with Prof. Charles Bouman</i> Research Focus: Deep Learning for Unmanned Aerial Vehicles (UAVs) Detection and Tracking Dec 2016 - Present <ul style="list-style-type: none">• Developed multi-layer UAVs detection algorithm using appearance and motion of UAVs• Explored appearance based Convolutional Neural Network classification algorithm• Verified algorithm on large dataset• Journal paper in progress Research Focus: Multi-target detection/tracking from a single camera in Unmanned Aerial Vehicles (UAVs) Dec 2014 - Dec 2016 <ul style="list-style-type: none">• Integrate machine learning method(SVM/Deep Learning) to UAVs detection• Established feature-based registration method for background motion estimation• Developed motion based UAVs detection algorithm using background subtracted image• Combined Kalman tracking to improve detection accuracy• Optimized detection/tracking algorithm using OpenMP to run on Odroid board in real time• Collaborated with Navel Postgraduate School to collect real flying videos• Constructed dataset of 50 videos of real field test with multiple moving UAVs in view• Publicized real flying UAV datasets by setting up website using JavaScript and HTML• Validated algorithm on large dataset using Python• Delivered code for real flying drones with automatic collision avoidance(autopilot) Research Focus: Dots/Character Marks Protection Sep 2013 - Dec 2014 <ul style="list-style-type: none">• Developed noise removing algorithm for scanned documents to protect dots/character marks. Xi'an Jiaotong University <i>Graduate Research Assistant with Prof. Xueming Qian</i> Research Focus: Refine GPS Location Estimation by Using Mined Near-Duplicate Image Groups Jul 2012 - Sep 2013 <ul style="list-style-type: none">• Improved location estimation precision by enhancing SIFT features• Mined salient features within each near duplicated image group Research Focus: Places of Interest Mining Jul 2011 - Sep 2012 <ul style="list-style-type: none">• Developed algorithm to mine near-duplicate image groups for 80 places of interest• Advised 5 undergraduate students to crawl images from social media websites• Trained students to construct large scale image set• Constructed Geo-tagged Large Dataset(GOLD) containing 0.22 million images covering 80 famous travel sites throughout world	

- Tested and verified algorithm on constructed dataset

Research Focus: GPS Location Estimation for Places of Interest Sep 2010 - Jul 2011

- Developed fast algorithm of GPS location estimation for places of interest from users' uploaded image from social media using **C++**
- Constructed hierarchy structure to accelerate location estimation

Information-Technology Talent Program (Xi'an Jiaotong University)

Undergraduate Research Project with Prof. Xueming Qian

Research Focus: Good Features for Image Classification Sep 2009 - Dec 2009

- Developed new feature descriptor for salient point in order of image retrieval and analysis
- Combined color and HOG information to generate descriptor
- Implemented feature extraction and image classification/retrieval in **C++**
- Improved image retrieval accuracy by 10%

Research Focus: Acoustical Signal for Video Retrieval Dec 2009 - Sep 2010

- Applied SVM to recognize and classify acoustical signal and built a system of training and classifying acoustical signal from videos
- Extracted Mel Frequency Cepstral Coefficient (MFCC) features for videos using **MATLAB**

Xi'an Jiaotong University

Undergraduate Research Project with Dr. Hongquan Cao

Research Focus: Misuse Analysis & Correction for Foreign Learner Sep 2008 - Jul 2010

- Analyzed Japanese verb and adjectival collocations for error database
- Utilized statistical model in error analysis
- Built automatic correction system

TEACHING EXPERIENCE

Teaching Assistant for Purdue's Model Based Image Processing 2017/2014 Fall

- Teach students **Model Based Image Processing Algorithms**, Matlab and **C** programming
- Advised students' understanding about **MAP Image Restoration, EM Algorithm, Markov Random Fields and Image Segmentation**

Teaching Assistant for Purdue's Image Processing I 2015 Spring

- Advised students' understanding about **Image Filtering, Connected Components, Image Restoration/Halftoning**

VOLUNTEER & LEADERSHIP

Volunteer to work as Japanese Instructor in Aurora Studio 2008-2013

Leadership Experience in Mathematical Modeling Club of Xi'an Jiaotong University 2008-2013

Organized Microsoft Student Research Club (around 100 students) 2007-2012

PUBLICATIONS

1. Ye, D. H., **Li, J.**, Chen, Q., Wachs, J., & Bouman, C. (2018). Deep Learning for Moving Object Detection and Tracking from a Single Camera in Unmanned Aerial Vehicles (UAVs). In *EI*.
2. **Li, J.**, Ye, D. H., Chung, T., Kolsch, M., Wachs, J., & Bouman, C. (2016). Multi-target detection and tracking from a single camera in Unmanned Aerial Vehicles (UAVs). In *International Conference on Intelligent Robots and Systems (IROS)*.
3. **Li, J.**, Qian, X., Lan, K., Qi, P., & Sharma, A. (2015). Improved image GPS location estimation by mining salient features. *Signal Processing: Image Communication*.
4. **Li, J.**, Qian, X., Li, Q., Zhao, Y., Wang, L., & Tang, Y. Y. (2015). Mining near duplicate image groups. *Multimedia Tools and Applications*.
5. **Li, J.**, Qian, X., Tang, Y., Yang, L., & Tao, M. (2013). GPS estimation for places of interest from social users' uploaded photos. *IEEE Transactions on Multimedia*.
6. **Li, J.**, Qian, X., Tang, Y. Y., Yang, L., & Liu, C. (2013). GPS estimation from users photos. In *International Conference on Multimedia Modeling*.

PATENTS

1. Shuhui Jiang, Xueming Qian, Ke Lan, **Jing Li** & Fan Li, Social Media User Multimedia Data Management. NO. ZL 2001 1 0364974.4
2. **Jing Li**, & Xueming Qian, Hierarchical fast image global positioning system (GPS) position estimation method. CN103324677B