

# Jing Li

---

CONTACT INFORMATION	MSEE 357, 465 Northwestern Avenue, West Lafayette, IN 47906	<b>Phone:</b> (765)476-3344 <b>Email:</b> jingli@purdue.edu <b>Homepage:</b> engineering.purdue.edu/people/jing.li.21
EDUCATION	<b>Purdue University</b> , West Lafayette, IN <i>Ph.D. student in Electrical and Computer Engineering(GPA: 4.0/4.0)</i> Spring 2019 <b>Xi'an Jiaotong University</b> , 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	<b>Programming:</b> C++, Python, Java, C, Matlab <b>Research Area :</b> Computer Vision, Image Processing Algorithms, Computational Imaging, Model Based Image Reconstruction, Machine Learning Algorithms	
RESEARCH EXPERIENCE	<b>Purdue University</b> <i>Graduate Research Assistant with Prof. Charles Bouman</i> <b>Research Focus: Extended Unmanned Aerial Vehicles (UAVs) Detection by Combining Supervised Learning Method</b> Dec 2016 - Present <ul style="list-style-type: none"><li>• Developed multi-layer UAVs detection algorithm using appearance and motion of UAVs</li><li>• Explored different supervised learning based classification algorithm</li><li>• Verified algorithm on large dataset</li><li>• Journal paper in progress</li></ul> <b>Research Focus: Multi-target detection/tracking from a single camera in Unmanned Aerial Vehicles (UAVs)</b> Dec 2014 - Present <ul style="list-style-type: none"><li>• Integrate <b>machine learning method(SVM/Deep Learning)</b> to UAVs detection</li><li>• Established feature-based registration method for background motion estimation</li><li>• Developed motion based UAVs detection algorithm using background subtracted image</li><li>• Combined Kalman tracking to improve detection accuracy</li><li>• Optimized detection/tracking algorithm using <b>OpenMP</b> to run on Odroid board in real time</li><li>• Collaborated with Navel Postgraduate School to collect real flying videos</li><li>• Constructed dataset of 50 videos of real field test with multiple moving UAVs in view</li><li>• Publicized real flying UAV datasets by setting up website using JavaScript and HTML</li><li>• Validated algorithm on large dataset using <b>Python</b></li><li>• Delivered code for real flying drones with automatic collision avoidance(autopilot)</li></ul> <b>Research Focus: Dots/Character Marks Protection</b> Sep 2013 - Dec 2014 <ul style="list-style-type: none"><li>• Developed noise removing algorithm for scanned documents to protect dots/character marks.</li></ul> <b>Xi'an Jiaotong University</b> <i>Graduate Research Assistant with Prof. Xueming Qian</i> <b>Research Focus: Refine GPS Location Estimation by Using Mined Near-Duplicate Image Groups</b> Jul 2012 - Sep 2013 <ul style="list-style-type: none"><li>• Improved location estimation precision by enhancing SIFT features</li><li>• Mined salient features within each near duplicated image group</li></ul> <b>Research Focus: Places of Interest Mining</b> Jul 2011 - Sep 2012 <ul style="list-style-type: none"><li>• Developed algorithm to mine near-duplicate image groups for 80 places of interest</li><li>• Advised 5 undergraduate students to crawl images from social media websites</li><li>• Trained students to construct large scale image set</li><li>• Constructed GeO-tagged Large Dataset(GOLD) containing 0.22 million images covering 80 famous travel sites throughout world</li></ul>	

- 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, Colorimetry, Image Restoration/Halftoning**
- Challenged students' knowledge in **Image Processing Algorithms**

VOLUNTEER &  
LEADERSHIP

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

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

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

PUBLICATIONS

1. **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)*.
2. **Li, J.**, Qian, X., Lan, K., Qi, P., & Sharma, A. (2015). Improved image GPS location estimation by mining salient features. *Signal Processing: Image Communication*.
3. **Li, J.**, Qian, X., Li, Q., Zhao, Y., Wang, L., & Tang, Y. Y. (2015). Mining near duplicate image groups. *Multimedia Tools and Applications*.
4. **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*.
5. **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