Jing Li

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Objective

Seeking full-time/internship **computer vision/image processing** research position.

Education

Purdue University, West Lafayette, IN
Ph.D. student in Electrical and Computer Engineering(GPA: 4.0/4.0) Summer 2018

Xi'an Jiaotong University, Xi'an, China
M.S. in Electrical and Computer Engineering(GPA: 3.8/4.0) July 2013
B.A. in Japanese(GPA: 90.2/100) July 2010
Minor in Finance Engineering(GPA: 87.0/100) July 2010

Skills

Programming: C++, Python, Java, C, Matlab
Language : Chinese, English, Japanese
Technical Skills : Computer Vision and Image Processing Algorithms, Inverse Problem Solving, Model Based Image Reconstruction, Machine Learning Algorithms

Research Experience

Purdue University
Graduate Research Assistant with Prof. Charles Bouman

Multi-target detection/tracking from a single camera in Unmanned Aerial Vehicles (UAVs), Published 2016 Dec 2014 - Present

- 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)
- Second paper in progress

Smart Document Processing: Dots/Character Marks Protection Sep 2013 - Dec 2014

- Developed noise removing algorithm for scanned documents to protect dots/character marks.

Xi'an Jiaotong University
Graduate Research Assistant with Prof. Xueming Qian

Refine GPS Location Estimation by Using Mined Near-Duplicate Image Groups, Published 2015 Jul 2012 - Sep 2013

- Improved location estimation precision by enhancing SIFT features
- Mined salient features within each near duplicated image group

Places of Interest Mining, Published 2015 Jul 2011 - Sep 2012

- 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

GPS Location Estimation for Places of Interest, Published 2013 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

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%

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**
- Improved video classification rate by combining audio and image signal

Xi'an Jiaotong University
Undergraduate Research Project with Dr. Hongquan Cao

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
- Accomplished thesis in **Japanese**

Teaching Experience

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

- Advise students with image processing labs and homework
- Teach students image processing algorithms, Matlab and **C** programming
- Write homework solutions and grade homework/labs

Teaching Assistant for Purdue's Image Processing I 2015 Spring

- Held office hours to ensure students coursework understanding
- Graded labs and homework
- Advised and challenged students' knowledge in image processing

Volunteer & Leadership

Volunteer in Aurora Studio 2008-2013

Lead 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