Hang Chu

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EDUCATION

School of Electrical and Computer Engineering, Cornell University **Aug. 2013-Aug. 2015**
M.S. (Thesis-Track), Computer Vision concentration
- GPA 4.04/4.30 (rank 1/8)
- Thesis: Vision-based Localization with Map Information
- Thesis committee: Prof. Tsuhan Chen, and Prof. Ashutosh Saxena

Dept. of Electronic Engineering, Shanghai Jiao Tong University (SJTU) **Sept. 2009-July 2013**
B.S. in Information Engineering
- Major GPA 3.90/4.30 (91.2/100) (rank 20/290)
- Thesis: A Heat-Map-based Algorithm for Group Activity Recognition
- Excellent Bachelor Thesis Award (3/290)

ACADEMIC EXPERIENCES

Toyota Technological Institute at Chicago **June 2015-present**
Robotics Visiting Student

INSA Lyon-SJTU Specific Program in Engineering **Jan. 2013-May 2013**
Image & Vision Technologies

RWTH Aachen University **Aug. 2012-Sept. 2012**
Automation & Simulation Summer School

PUBLICATIONS

Journal Papers:
- Weiyao Lin, Hang Chu, Jianxin Wu, Bin Sheng, and Zhenzhong Chen, A Heat-Map-based Algorithm for Recognizing Group Activities in Videos, IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2013. (pdf, demo)

Conference Papers:
- Hang Chu, Dong-Ki Kim, and Tsuhan Chen, You Are Here: Mimicking the Human Thinking Process in Reading Floor-Plans, to appear at International Conference on Computer Vision (ICCV), 2015. (pdf, demo)
- Hang Chu, and Anh Vu, Consistent Ground-Plane Mapping: A Case Study Utilizing Low-Cost Sensor Measurements and a Satellite Image, International Conference on Robotics and Automation (ICRA), 2015. (pdf, demo)
- Hang Chu, Andrew Gallagher, and Tsuhan Chen, GPS Refinement and Camera Orientation Estimation from a Single Image and a 2D Map, Workshop on Mobile Vision, Computer Vision and Pattern Recognition (CVPRW), 2014. (pdf, demo)
- Hang Chu, Weiyao Lin, Jianxin Wu, Xingtong Zhou, Yuanzhe Chen, and Hongxiang Li, A New Heat-Map-based Algorithm for Human Group Activity Recognition, ACM Multimedia (ACM MM), 2012. (pdf, demo)

Under Review:
- Hang Chu, Hongyuan Mei, Mohit Bansal, and Matthew R. Walter, Accurate Vision-based Vehicle Localization using Satellite Imagery, submitted to International Conference on Robotics and Automation (ICRA), 2016. (pdf)

RESEARCH EXPERIENCES

Robotics Visiting Student, Toyota Technological Institute at Chicago (TTI-C)
Advisor: Prof. Matthew Walter **June 2015-present**
- Ongoing research on SLAM using deep siamese networks, and solving the PnP problem with weak correspondences.
- Developing a system for localization of an agent, with aid from a companion scout UAV and natural language descriptions. (Collaborating project with MIT Lincoln Lab)

M.S. Student, Advanced Multimedia Processing Lab, Cornell University

Advisor: Prof. Tsuhan Chen, Dr. Andrew Gallagher, and Prof. Ashutosh Saxena **Aug. 2013-Aug. 2015**

- Proposed methods and developed systems in multiple projects of vision-based localization with map information.
- Developed a system for photo aesthetic evaluation using objectness detection and photography composition rules. (Collaborating project with Futurewei Media Lab)
- Mentored Cornell M.Eng. student project of Kaizhou Xu, on visual-based indoor 3D reconstruction.
- Published three conference papers as the first author (one in submission).

Undergraduate Research Student, Computer Vision Group, Dept. of Electronic Engineering, SJTU

Advisor: Prof. Weiyao Lin **Jan. 2012-July 2013**

- Proposed the method and developed the system for automatic group activity recognition in surveillance videos, based on a temporal-spatial model inspired by heat diffusion.
- Published one conference paper and one journal paper.

Undergraduate Research Student, Machine Learning Group, Dept. of Computer Science, SJTU

Advisor: Prof. Wu-Jun Li **Sept. 2011-Jan. 2013**

- Studied basic machine learning and probabilistic graphical models.
- Studied image hashing and sentiment analysis in social networks.

INTERNSHIPS

Research Intern, Volkswagen Electronics Research Laboratory **June 2014-Aug. 2014**

- Proposed the method and developed the system for automatic registration of high resolution road-lane images, using low-cost vehicle sensors and a low resolution satellite image.
- Published one conference paper as the first author.

Research Intern, China Mobile Research Institute **July 2012-Sept. 2012**

- Studied WiFi fingerprint-based indoor localization algorithms.

HONORS & AWARDS

ICRA Student Travel Award, 2015
SJTU Excellent Bachelor Thesis Award, 2013 (3/290)
ACM Multimedia Student Travel Award, 2012
SJTU Pan Wen Yuan Scholarship, 2010 (15/630)
SJTU Student Award, 2009-2013 (60/630)

ACADEMIC SERVICES

Reviewer/External Reviewer

Conferences: *CVPR* 2014-2015, *ECCV* 2014, *ACCV* 2014, *ICIP* 2015
Journals: *Circuits Systems and Signal Processing*, *Visual Communication and Image Representation*

SKILLS

Proficient in: C++, Matlab, OpenCV
Experience in: Python, JavaScript, ROS, OpenGL, Caffe, LabVIEW