Hang Chu

Mobile: (607) 280-7083 / E-mail: chuhang1122@gmail.com, hc772@cornell.edu
Address: 5020 S. Lake Shore Dr. 2217N, Chicago, IL 60615 / Homepage: chuhang.github.io

EDUCATION

School of Electrical and Computer Engineering, Cornell University

Aug. 2013-Aug. 2015

Sept. 2009-July 2013

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) 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

Automation & Simulation Summer School

Aug. 2012-Sept. 2012

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