



# HangChu

PhD Student in Computer Vision

## Tel & Skype

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hangchu1122

## Mail

chuhang1122@gmail.com

## Website

chuhang.github.io

## Programming

Proficient in

C/C++

Matlab

Python

Experience in

HTML/Javascript

VHDL

Lua

## Software Skills

ROS

OpenCV

Halide

WebGL

LabVIEW

Caffe

TensorFlow

Torch

PyTorch

L<sup>A</sup>T<sub>E</sub>X

## Languages

Mandarin (*native*)

English (*proficient*)

Spanish (*60% duolingo*)

## Education

- 2016 - Now **Ph.D. Student in Machine Learning** [University of Toronto](#)  
GPA: 4.00/4.00  
Advisors: Raquel Urtasun and Sanja Fidler
- 2013 - 2015 **M.S. in Electrical and Computer Engineering** [Cornell University](#)  
GPA: 4.00/4.00 (rank 1/8)  
Thesis: Vision-based Localization with Map Information  
Advisors: Tsuhan Chen and Ashutosh Saxena
- 2009 - 2013 **B.S. in Information Engineering** [Shanghai Jiao Tong University](#)  
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)  
Advisors: Weiyao Lin and Wu-Jun Li

## Experience

### Work

- 05/17 - 08/17 **Research Intern** [Google Research](#)  
Worked with Utsav Prabhu and Andrew Gallagher, Machine Perception team.  
Video semantic understanding.
- 06/15 - 10/15 **Research Intern** [Toyota Technological Institute](#)  
Worked with Matthew Walter, Robot Intelligence Through Perception Lab.  
Cross-view localization of a ground image in a satellite image.  
Localization in forest environment (Collaboration with MIT Lincoln Lab).
- 06/14 - 08/14 **Research Intern** [Volkswagon Electronic Research Lab](#)  
Worked with Anh Vu, Driving Assistance Systems team.  
Registration of high-resolution road-lane images for mapping.

### Academic

- 10/15 - 06/16 **Visiting Researcher** [University of Toronto](#)  
Semantic scene understanding, Machine Learning group.
- 01/13 - 05/13 **Student** [INSA Lyon-SJTU](#)  
Image technologies, Specific Program in Engineering.
- 08/12 - 09/12 **Student** [RWTH Aachen University](#)  
Automation and simulation, summer school.

## Courses

### Undergraduate

Linear Algebra (A+)  
Discrete Math (A+)  
Probability & Statistics (A)  
Image Processing (A)  
Signal Processing (A)

### Graduate

Computer Vision (A+)  
Medical Image Analysis (A+)  
Generative Models (A+)  
Robot Learning (A)  
Numerical Analysis (A)  
Heuristic Optimization (A-)

### Certified

Machine Learning  
Graphical Models

## Services

### Conference Reviewer

-ICME 2018  
-BMVC 2017  
-ICCV 2017  
-NIPS 2016  
-IROS 2016

### Journal Reviewer

-Circuits Systems and Signal Processing  
-Visual Communication and Image Representation  
-Security and Communication Networks  
-Image Communication  
-Intelligent Transport System  
-Neural Networks and Learning Systems

## Awards

UofT Fellowship  
2016-2020  
ICRA Travel Award  
2015  
Bachelor Thesis Award  
2013  
ACM MM Travel Award  
2012  
Pan Wen Yuan Scholarship  
2010  
SJTU Scholarship  
2009-2013

## Places Lived

Toronto, ON  
Pittsburgh, PA  
Chicago, IL  
Bay Area, CA  
Ithaca, NY  
Shanghai, China  
Shijiazhuang, China

## Publications

### Working Papers

[1] **Hang Chu**, Utsav Prabhu, Andrew Gallagher, Michael Nechyba  
Video-Undirection: Discovering Video Scenes from Shot Sequences  
*Manuscript for Computer Vision and Pattern Recognition (CVPR)*, 2019.

### Journal Papers

[2] Weiyao Lin, **Hang Chu**, Jianxin Wu, Bin Sheng, and Zhenzhong Chen  
A Heat-Map-based Algorithm for Recognizing Group Activities in Videos [\[pdf\]](#)[\[demo\]](#)  
*IEEE Transactions on Circuits and Systems for Video Technology (T-CSVT)*, 2013.

### Conference Papers

[3] **Hang Chu**, Daiqing Li, Sanja Fidler  
A Face-to-Face Neural Conversation Model [\[pdf\]](#)[\[demo\]](#)  
*Computer Vision and Pattern Recognition (CVPR)*, 2018.  
[4] **Hang Chu**, Wei-Chiu Ma, Kaustav Kundu, Raquel Urtasun, Sanja Fidler  
SurfConv: Bridging 3D and 2D Convolution for RGBD Images [\[pdf\]](#)[\[code\]](#)  
*Computer Vision and Pattern Recognition (CVPR)*, 2018.  
[5] Shenlong Wang, Min Bai\*, Gellert Mattyus\*, **Hang Chu\***, Wenjie Luo, Bin Yang, Justin Liang, Joel Cheverie, Sanja Fidler, Raquel Urtasun  
TorontoCity: Seeing the World with a Million Eyes [\[pdf\]](#)  
*International Conference on Computer Vision (ICCV)*, 2017.  
[6] **Hang Chu**, Shenlong Wang, Raquel Urtasun, and Sanja Fidler  
HouseCraft: Building Houses from Rental Ads and Street Views [\[pdf\]](#)[\[demo\]](#)[\[code\]](#)  
*European Conference on Computer Vision (ECCV)*, 2016.  
[7] **Hang Chu**, Dong-Ki Kim, and Tsuhan Chen  
You Are Here: Mimicking the Human Thinking Process in Reading Floor-Plans [\[pdf\]](#)[\[demo\]](#)  
*International Conference on Computer Vision (ICCV)*, 2015.  
[8] **Hang Chu**, and Anh Vu  
Consistent Ground-Plane Mapping: A Case Study Utilizing Low-Cost Sensor Measurements and a Satellite Image [\[pdf\]](#)[\[demo\]](#)  
*International Conference on Robotics and Automation (ICRA)*, 2015.  
[9] **Hang Chu**, Weiyao Lin, Jianxin Wu, Xingtong Zhou, Yuanzhe Chen, and Hongxiang Li  
A New HeatMap-based Algorithm for Human Group Activity Recognition [\[pdf\]](#)[\[demo\]](#)  
*ACM Multimedia (ACM MM)*, 2012.

### Workshop Papers

[10] **Hang Chu**, Raquel Urtasun, and Sanja Fidler  
Song From PI: A Musically Plausible Network for Pop Music Generation [\[pdf\]](#)[\[demo\]](#)  
*International Conference on Learning Representations Workshop (ICLR Workshop)*, 2016.  
[11] **Hang Chu**, Hongyuan Mei, Mohit Bansal, and Matthew Walter  
Accurate Vision-based Localization by Transferring Between Ground and Satellite Images [\[pdf\]](#)  
*Neural Information Processing Systems Workshops (NIPS Workshop)*, 2015.  
[12] **Hang Chu**, Andrew Gallagher, and Tsuhan Chen  
GPS Refinement and Camera Orientation Estimation from a Single Image and a 2D Map [\[pdf\]](#)[\[demo\]](#)[\[code\]](#)  
*Computer Vision and Pattern Recognition Workshops (CVPR Workshop)*, 2014.