



# HangChu

PhD Student in Computer Vision

## Tel & Skype

+1-647-627-8109  
hangchu1122

## Mail

chuhang1122@  
gmail.com

## Website

chuhang.github.io

## Programming

Proficient in

Python

C/C++

Matlab

Experience in

HTML/Javascript

VHDL

Lua

## Software Skills

OpenCV

ROS

Halide

LabVIEW

Caffe

TensorFlow

Torch

PyTorch

WebGL

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

## Languages

Mandarin (*native*)

English (*proficient*)

Spanish (*beginner*)

## 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

- 05/19 - 08/19 **Research Intern** [Facebook Reality Labs](#)  
Worked with Shugao Ma, Pittsburgh Team.  
Facial avatar generation.
- 05/18 - 04/19 **Research Intern** [Nvidia Research](#)  
Worked with Sanja Fidler, Deep Learning Team.  
3D content generation.
- 05/17 - 08/17 **Research Intern** [Google Research](#)  
Worked with Utsav Prabhu and Andrew Gallagher, Machine Perception Team.  
Video semantic understanding.
- 10/15 - 06/16 **Visiting Researcher** [University of Toronto](#)  
Worked with Raquel Urtasun and Sanja Fidler, Machine Learning Group  
Semantic scene 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.

## 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+)  
Blockchain (A+)  
Robot Learning (A)  
Numerical Analysis (A)  
Heuristic Optimization (A-)

### Certified

Machine Learning  
Graphical Models

## Services

### Conference Reviewer

CVPR-19,20  
ICCV-17,19  
ECCV-20  
NIPS-16  
AAAI-20  
ICRA-19,20  
IROS-16  
BMVC-17  
ICME-18,19,20

### Journal Reviewer

IEEE-PAMI  
IEEE-CSVT  
IEEE-Cybernetics  
IEEE-NNLS  
IEEE-ITS  
Springer-CSSP  
Elsevier-PR  
Elsevier-VCIR  
Elsevier-SPIC  
Wiley-SCN

## Awards

UofT Fellowship  
2016-2020  
ICCV Doctoral Consortium  
2019  
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

### Patent

#### [1] Partitioning Videos

**Hang Chu**, Michael Nechyba, Andrew Gallagher, Utsav Prabhu  
US Patent App. 15/813978, Google, 2019.

### Journal

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

### Conference

- [3] Neural Turtle Graphics for Modeling City Road Layouts [\[pdf\]](#)[\[code\]](#)[\[demo\]](#)  
**Hang Chu**, Daiqing Li, David Acuna, Amlan Kar, Maria Shugrina, Xinkai Wei, Ming-Yu Liu, Antonio Torralba, Sanja Fidler  
*International Conference on Computer Vision (ICCV)*, **oral**, 2019.
- [4] Single Image Intrinsic Decomposition without a Single Intrinsic Image [\[pdf\]](#)  
Wei-Chiu Ma, **Hang Chu**, Bolei Zhou, Raquel Urtasun, Antonio Torralba  
*European Conference on Computer Vision (ECCV)*, 2018.
- [5] A Face-to-Face Neural Conversation Model [\[pdf\]](#)[\[demo\]](#)  
**Hang Chu**, Daiqing Li, Sanja Fidler  
*Computer Vision and Pattern Recognition (CVPR)*, 2018.
- [6] SurfConv: Bridging 3D and 2D Convolution for RGBD Images [\[pdf\]](#)[\[code\]](#)  
**Hang Chu**, Wei-Chiu Ma, Kaustav Kundu, Raquel Urtasun, Sanja Fidler  
*Computer Vision and Pattern Recognition (CVPR)*, 2018.
- [7] TorontoCity: Seeing the World with a Million Eyes [\[pdf\]](#)  
Shenlong Wang, Min Bai\*, Gellert Mattyus\*, **Hang Chu**\*, Wenjie Luo, Bin Yang, Justin Liang, Joel Cheverie, Sanja Fidler, Raquel Urtasun  
*International Conference on Computer Vision (ICCV)*, 2017.
- [8] HouseCraft: Building Houses from Rental Ads and Street Views [\[pdf\]](#)[\[demo\]](#)[\[code\]](#)  
**Hang Chu**, Shenlong Wang, Raquel Urtasun, Sanja Fidler  
*European Conference on Computer Vision (ECCV)*, 2016.
- [9] You Are Here: Mimicking the Human Thinking Process in Reading Floor-Plans [\[pdf\]](#)[\[demo\]](#)  
**Hang Chu**, Dong-Ki Kim, Tsuhan Chen  
*International Conference on Computer Vision (ICCV)*, 2015.
- [10] Consistent Ground-Plane Mapping: A Case Study Utilizing Low-Cost Sensor Measurements and a Satellite Image [\[pdf\]](#)[\[demo\]](#)  
**Hang Chu**, Anh Vu  
*International Conference on Robotics and Automation (ICRA)*, 2015.
- [11] A New HeatMap-based Algorithm for Human Group Activity Recognition [\[pdf\]](#)[\[demo\]](#)  
**Hang Chu**, Weiyao Lin, Jianxin Wu, Xingtong Zhou, Yuanzhe Chen, Hongxiang Li  
*ACM Multimedia (SIGMM)*, 2012.

### Workshop

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