



HangChu

PhD Student in Computer Vision

Tel & Skype

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Mail

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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^AT_EX

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
ICCV-17,19
NIPS-16
ICRA-19
IROS-16
BMVC-17
ICME-18,19

Journal Reviewer

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

Awards

UoT 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

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.