



HangChu

Computer Vision Researcher

Tel & Skype

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Mail

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Website

chuhang.github.io

Programming

Proficient in

Python
Matlab
C/C++

Experience in

Javascript
VHDL
Java
Julia
Lua

Software Skills

OpenCV
ROS
LabVIEW
Caffe
TensorFlow
Torch
PyTorch
WebGL
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 - 04/20 **Research Intern / Research Collaborator** [Facebook Reality Labs](#)
Worked with Shugao Ma, Pittsburgh Team.
Facial avatar generation and VR telepresence.
- 05/18 - 04/19 **Research Intern** [Nvidia Research](#)
Worked with Sanja Fidler, Deep Learning Team.
3D content generation for simulation.
- 05/17 - 08/17 **Research Intern** [Google Research](#)
Worked with Utsav Prabhu and Andrew Gallagher, Machine Perception Team.
Video semantic understanding and partitioning.
- 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.
High-resolution road-lane image registration 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
ACCV-20
BMVC-17
WACV-21
NIPS-16
AAAI-20
ICRA-19,20
IROS-16
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

Vector Research Grant
2018-2020
UoT Fellowship
2016-2020
ICCV Doctral Consortium
2019
ICRA Travel Award
2015
Bachelor Thesis Award
2013
ACM MM Travel Award
2012
Pan Wen Yuan Scholarship
2010
SJTU Scholarship
2009-2013

Publications

Patent

[1] Partitioning Videos

Hang Chu, Michael Nechyba, Andrew Gallagher, Utsav Prabhu
US Patent 10628486, 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] Expressive Telepresence via Modular Codec Avatar [\[pdf\]](#)[\[demo\]](#)
Hang Chu, Shugao Ma, Fernando De la Torre, Sanja Fidler, Yaser Sheikh
European Conference on Computer Vision (ECCV), 2020.
- [4] Neural Turtle Graphics for Modeling City Road Layouts [\[pdf\]](#)[\[demo\]](#)
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.
- [5] 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.
- [6] A Face-to-Face Neural Conversation Model [\[pdf\]](#)[\[demo\]](#)
Hang Chu, Daiqing Li, Sanja Fidler
Computer Vision and Pattern Recognition (CVPR), 2018.
- [7] 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.
- [8] 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.
- [9] 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.
- [10] 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.
- [11] 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.
- [12] 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.

Places Lived

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

Workshop

[13] 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.

[14] 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.

[15] 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.