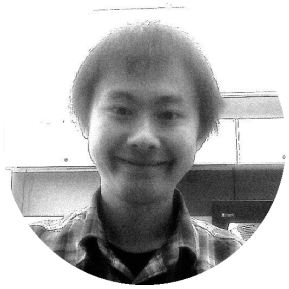

HangChu

Computer Vision Researcher

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+1-647-627-8109
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Mail
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gmail.com

Website
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Programming
Proficient in
Python
Matlab
C/C++
Experience in
Javascript
VHDL
Java
Julia
Lua

Software Skills
OpenCV
ROS
LabVIEW
Caffe
TensorFlow
Torch
PyTorch
WebGL
Node.js
LaTeX

Languages
Mandarin (*native*)
English (*proficient*)
Spanish (*beginner*)

Education

2016 - 2020 **Doctor of Philosophy Candidate, Machine Learning** University of Toronto
GPA: 4.00/4.00
Thesis: Deep Learning Techniques for Digital Content Generation
Worked with Raquel Urtasun and Sanja Fidler

2013 - 2015 **Master of Science, 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 **Bachelor of Science, 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

05/20 - Now **Principal Research Scientist** Autodesk
Autodesk AI Lab.

05/19 - 04/20 **Researcher** Facebook
Facebook Reality Labs, with Shugao Ma.
Human face modeling and VR telepresence.

05/18 - 04/19 **Researcher** Nvidia
Deep Learning Research, with Sanja Fidler.
3D content generation for simulation.

05/17 - 08/17 **Research Intern** Google
Machine Perception Research, with Utsav Prabhu and Andrew Gallagher.
Video semantic understanding and partitioning.

10/15 - 06/16 **Visiting Researcher** University of Toronto
Machine Learning Group, with Raquel Urtasun and Sanja Fidler.
Semantic scene understanding.

06/15 - 10/15 **Research Intern** Toyota Technological Institute
Robot Intelligence Through Perception Lab, with Matthew Walter.
Cross-view localization and localization in forest environment.

06/14 - 08/14 **Research Intern** Volkswagen
Electronic Research Lab, with Anh Vu.
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-19,20,21,22
ICCV-17,19,21
ECCV-20,22
ACCV-20
BMVC-17
WACV-21,22
NeurIPS-16,22
ICLR-22
AAAI-20,21,22
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
Editorial Board
Frontiers-SPIP

Awards

Vector Research Grant
2018-2020
UofT 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.

[2] Iterative Spatial Graph Generation
Hang Chu, Daiqing Li, David Acuna, Amlan Kar, Maria Shugrina,
Ming-Yu Liu, Antonio Torralba, Sanja Fidler
US Patent App. 16/825199, Nvidia, 2020.

Journal

[3] 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

[4] SimCURL: Simple Contrastive User Representation Learning from Command Sequences
Hang Chu, Joseph G. Lambourne, Amir Hosein Khasahmadi, Karl D.D. Willis,
Fraser Anderson, Yaoli Mao, Linh Tran, Justin Matejka, Jo Vermeulen
Knowledge Discovery and Data Mining (**KDD**), 2022 (submitted).

[5] CLIP-Forge: Towards Zero-Shot Text-to-Shape Generation[pdf]
Aditya Sanghi, **Hang Chu**, Joseph G. Lambourne, Ye Wang, Chin-Yi Cheng,
Marco Fumero, Kamal Rahimi Malekshan
Computer Vision and Pattern Recognition (**CVPR**), 2022.

[6] JoinABLe: Learning Bottom-up Assembly of Parametric CAD Joints[pdf]
Karl D.D. Willis, Pradeep Kumar Jayaraman, **Hang Chu**, Yunsheng Tian,
Yifei Li, Daniele Grandi, Aditya Sanghi, Linh Tran, Joseph G. Lambourne,
Armando Solar-Lezama, Wojciech Matusik
Computer Vision and Pattern Recognition (**CVPR**), 2022.

[7] LSD-StructureNet: Modeling Levels of Structural Detail in 3D Part Hierarchies [pdf]
Dominic Roberts, Ara Danielyan, **Hang Chu**, Mani Golparvar-Fard, David Forsyth
International Conference on Computer Vision (**ICCV**), 2021.

[8] House-GAN++: Generative Adversarial Layout Refinement Networks [pdf][demo]
Nelson Nauata, Sepidehsadat Hosseini, Kai-Hung Chang, **Hang Chu**, Chin-Yi Cheng,
Yasutaka Furukawa
Computer Vision and Pattern Recognition (**CVPR**), 2021.

[9] Fusion 360 Gallery: A Dataset and Environment for Programmatic CAD
Reconstruction [pdf]
Karl D.D. Willis, Yewen Pu, Jieliang Luo, **Hang Chu**, Tao Du, Joseph G. Lambourne,
Armando Solar-Lezama, Wojciech Matusik
ACM SIGGRAPH (**SIGGRAPH**), 2021.

[10] 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.

Places Lived

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

[11] 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.

[12] 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.

[13] A Face-to-Face Neural Conversation Model [pdf][demo]
Hang Chu, Daiqing Li, Sanja Fidler
Computer Vision and Pattern Recognition (**CVPR**), 2018.

[14] 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.

[15] 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.

[16] 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.

[17] 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.

[18] 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.

[19] 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

[20] Engineering Sketch Generation for Computer-Aided Design [pdf]
Karl D.D. Willis, Pradeep Kumar Jayaraman, Joseph G. Lambourne, **Hang Chu**, Yewen Pu
Computer Vision and Pattern Recognition Workshop (**CVPRW**), 2021.

[21] 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.

[22] 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.

[23] 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.