# HangChu

## PhD Student in Computer Vision

**Tel & Skype**
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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
LaTeX

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

# Education

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|---|---|---|
| 2016 - Now | **Ph.D. Student in Machine Learning** | University of Toronto |

GPA: 4.00/4.00
Advisors: Raquel Urtasun and Sanja Fidler

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| 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

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| 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

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| 05/19 - now | **Research Intern / Research Collaborator** | Facebook Reality Labs |

Worked with Shugao Ma, Pittsburgh Team.
Facial avatar generation.

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| 05/18 - 04/19 | **Research Intern** | Nvidia Research |

Worked with Sanja Fidler, Deep Learning Team.
3D content generation.

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| 05/17 - 08/17 | **Research Intern** | Google Research |

Worked with Utsav Prabhu and Andrew Gallagher, Machine Perception Team.
Video semantic understanding.

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| 10/15 - 06/16 | **Visiting Researcher** | University of Toronto |

Worked with Raquel Urtasun and Sanja Fidler, Machine Learning Group
Semantic scene understanding.

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| 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).

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| 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.

# 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] Expressive Telepresence via Modular Codec Avatar
**Hang Chu**, Shugao Ma, Fernando De la Torre, Sanja Fidler, Yaser Sheikh
*European Conference on Computer Vision* (**ECCV**), **submitted**, 2020.

[4] 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.

[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.

**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.