

## Chengjiang Long

---

Kitware Inc.  
Computer Vision Team  
28 Corporate Drive  
Clifton Park, NY, USA 12065

Email: clong@stevens.edu  
cjfykx@gmail.com  
Tel: (201)850-7288  
Website: [www.chengjianglong.com](http://www.chengjianglong.com)

- EDUCATION**
- Ph.D.**, Computer Science Jan 2012 - Oct 2015  
**Stevens Institute of Technology**, Hoboken, NJ, USA  
Advisor: Prof. Gang Hua
- M.S.**, Computer Science Sep 2009 - Jun 2011  
**Wuhan University**, Wuhan, Hubei, P.R.China  
GPA: 3.62/4.0 (Overall), 3.74/4.0(Major)  
Advisor: Prof. Jianhui Zhao and Prof. Zhiyong Yuan
- B.S.**, Computer Science Sep 2005 - Jun 2009  
**Wuhan University**, Wuhan, Hubei, P.R.China  
GPA: 3.26/4.0 (Overall), 3.41/4.0(Major)  
Advisor: Prof. Jianhui Zhao

**INTEREST:** Computer Vision, Machine Learning and Artificial Intelligence  
Deep learning, active learning, collaborative learning, distributed learning, multiple XXX learning, object recognition, image/video processing, image/video segmentation, object detection.

Computer Graphics and Visualization  
Point cloud related research, mesh reconstruction and 2D/3D visualization.

- WORK EXPERIENCE**
- Kitware Inc., Clifton Park, NY** Mar 2017 - Present  
*Computer Vision Researcher (Senior R&D Engineer)*
- Continue working on AFRL DARPA Media Forensic (MediFor) Project, in charge of using video authentication for video forgery detection.
  - Develop robust deep learning solutions for video manipulation detection challenges.
  - Develop parametric probabilistic models to solve the task of automatic image annotation or labeling by exploiting the metadata and the visual information.
- Kitware Inc., Clifton Park, NY** Feb 2016 - Mar 2017  
*Computer Vision Researcher (R&D Engineer)*
- Probability Programming for Advanced Machine Learning (PPAML) Project. (Collaborate with Galois, Inc.)
  - 3D Foot Auto-measurement Project. (Collaborate with KEU for True Gault)
  - Drake – an open source project for robotics. (Collaborate with MIT, Toyota Global Research)
  - AFRL DARPA Media Forensic (MediFor) Project. (Collaborate with Dartmouth University, UC Berkeley, Columbia University and SUNY-Albany)
- Vision Lab, Stevens Institute of Technology** Jan 2012 - Dec 2015  
*Research Assistant* Advisor: Prof. Gang Hua
- Reinforced Multi-Annotators Active Learning with Multi-classes Gaussian Processes Classifier for Vision Recognition.

- Correlational Gaussian Processes for Cross-domain Visual Recognition.
- Collaborative Active Learning of a Kernel Machine Ensemble for Recognition.
- Active Visual Recognition with Expertise Estimation in Crowdsourcing.

**GE Global Research, Niskayuna, NY** Jun - Aug, 2015  
Research Intern Mentor: Dr. Ning Zhou, Xiao Bian and Ser-Nam Lim

- 3D vision, recognition and deep learning.
- Estimate accurate camera pose on 2D view images using large-scale synthetic images and limited number of real images.

**NEC Laboratories America, Cupertino, CA** May - Aug, 2013  
Research Intern Mentor: Dr. Xiaoyu Wang

- Location Relaxation and Regionlets Re-localization for Efficient and Accurate Object Detection.
- Our detector achieves the best result in every category in terms of all the evaluation criteria on the KITTI dataset without considering deep learning. For more details, please refer to [http://www.cvlibs.net/datasets/kitti/eval\\_object.php](http://www.cvlibs.net/datasets/kitti/eval_object.php).

**Vision & Graphics Lab, Wuhan University** Mar 2007 - Nov 2011  
Research Assistant Advisor: Prof. Jianhui Zhao and Zhiyong Yuan

- New Technology on Meteorological Visibility Observation and Calibration. (*Non-profit special research program, No.: GYHY201106047*).
- Project of Natural Science Foundation of Hubei Province (*NSFHB, No.: ZRY0940*)–Pattern Recognition Research Based on Forest Fire Smoke.
- Collaboration Project of VisImage Systems Inc. and Wuhan University–Measurement Simulation Based on Multi-source Image.
- 3D Virtual Reality Environment Research–The Online Show of Panoramic images and 3D models Based on Mobile Phone.
- The Monitoring System for Railway Safety.
- Project of Natural Science Foundation of China (*NSFC, No.: 60603079*)–Features Measurement and Error Analysis Based on 3D Unorganized Point.
- National Innovative Experiment Planning Funding from Ministry of Education of P.R. China–Partial Features Measurement and Comparison Based on 3D Unorganized Points.
- Cognitive and Neural Information Science (*985 Program at Wuhan University, No.: 2006CB504804*)–Study on Surgical Training Simulation System Based on Virtual Reality.

**Wuhan Huiyoutianxia Technology Co., Ltd** Mar - Apr, 2009  
Part-time Technician

- Design the database for the large maternal and child web site.
- Collaborate to build the web site.

**TEACHING  
EXPERIENCE**

**Stevens Institute of Technology**  
Teaching Assistant

- *Artificial Intelligence* Aug - Dec, 2014&2015
- *Machine Learning: Fundamental and Applications* Aug - Dec, 2014&2015
- *Computer Vision* Jan - May, 2012

Wuhan University

Teaching Assistant

• *Pattern Recognition*

Mar - Jun, 2010

**PUBLICATIONS** Journal and conference papers, highlighting with **3 ICCV**, **1 CVPR**, **1 T-PAMI**, **1 IJCV**, **1 ACCV** and **1 ICTAI** of my **14 1st/2nd-author papers**, in which the **2nd** authorship indicates the 1st author I worked with as my advisors or as the students I supervised.

- [1] **C. Long**, G. Hua. Correlational Gaussian Processes for Cross-domain Visual Recognition. In *Proc. CVPR*, Honolulu, Hawaii, July 21-26, 2017 (*Acceptance: 20.18%*).
- [2] G. Hua, **C. Long**, M. Yang, Y. Gao. Collaborative Active Visual Recognition from Crowds: A Distributed Ensemble Approach. *IEEE Trans. On Pattern Analysis and Machine Intelligence (T-PAMI)*, 2017 (*Top 2 journal*).
- [3] **C. Long**, E. Smith, A. Basharat, A. Hoogs. A C3D-based Convolutional Neural Network for Frame Dropping Detection in a Single Shot Video. In *Proc. CVPR Workshop on Media Forensics (CVPRW)*, Honolulu, Hawaii, July 26, 2017.
- [4] C. Xing, **C. Long**, H. Guo, Y. Nie, Y. Zhang, D. Zhu, Q. Ma, M. Tian. How Does A Camera Look at One 3D CAD Object? In *Proc. ICTAI*, Boston, MA, USA, Nov 6-8, 2017.
- [5] Y. Nie, X. Cao, **C. Long**, P. Li, G. Li, H. Sun. Refining Sparse Landmarks to Continuous and High-Quality Face Contour. *IEEE Trans. On Image Processing (TIP)*, 2017 (*Under review*).
- [6] Y. Nie, X. Cao, **C. Long**, P. Li, G. Li. L2GSCI: Local to Global Seam Cutting and Integrating for Pixel-Level Face Contour Extraction. *arXiv*, 2017 (*Cite as arXiv:1703.01605*).
- [7] **C. Long**, G. Hua, A. Kapoor. A Joint Gaussian Process Model for Active Visual Recognition with Expertise Estimation in Crowdsourcing. *International Journal of Computer Vision (IJCV)*, 116(2): 136-160, 2016 (*Top 2 journal*).
- [8] **C. Long**, G. Hua. Multi-class Multi-annotator Active Learning with Robust Gaussian Process for Visual Recognition. In *Proc. ICCV*, Santiago, Chile, Dec 13-16, 2015 (*Acceptance: 19.62%*).
- [9] **C. Long**, X. Wang, G. Hua, M. Yang, Y. Lin. Accurate Objection Detection with Location Relaxation and Regionlets Re-localization. In *Proc. ACCV*, Singapore, Nov 1-5, 2014. (*Acceptance: 27.0%*)
- [10] J. Zhao, **C. Long**, et al. A New K Nearest Neighbors Search Algorithm Using Cell Grids for 3D Scattered Point Cloud. *ELEKTRONIKA IR ELEKTROTECHNIKA*, 20(1): 81-87, 2014.
- [11] **C. Long**, G. Hua, A. Kapoor. Active Visual Recognition with Expertise Estimation in Crowdsourcing. In *Proc. ICCV*, Sydney, Australia, Dec 3-6, 2013. (*Acceptance: 27.8%*)
- [12] G. Hua, **C. Long**, M. Yang, Y. Gao. Collaborative Active Learning of a Kernel Machine Ensemble for Recognition. In *Proc. ICCV*, Sydney, Australia, Dec 3-6, 2013. (*Acceptance: 27.8%*)
- [13] J. Zhao, Y. Ding, RS Goonetillek, S. Xiong, Y. Zhang, **C. Long**, et al. Interactive Deformation Simulation of Manual Girth Measurement for Limbs. *Information*, 15: 339, 2012.

- [14] J. Zhao, Y. Zhang, Y. Ding, **C. Long**, et al. Accelerated Gaussian Mixture Model and Its Application on Image Segmentation. In *Proc. ICGIP*, Singapore, October, 2012.
- [15] **C. Long**, J. Zhao, et al. A New Region Growing Algorithm for Triangular Mesh Recovery from Scattered 3D Points. *Transactions on Edutainment VI, LNCS*, 6758: 237-246, 2011.
- [16] Y. Zhao, J. Zhao, J. Huang, S. Han, **C. Long**, et al. Contourlet Transform Based Texture Analysis for Smoke and Fog Classification. *Applied Mechanics and Materials* 88(89): 537-542, 2011.
- [17] Y. Ding, J. Zhao, Z. Yuan, Y. Zhang, **C. Long**, et al. Constrained Surface recovery using RBF and its efficiency improvements. *Journal of Multimedia*, 5(1): 55-62, 2011.
- [18] **C. Long**, J. Zhao, et al. Transmission: A New Feature for Computer Vision Based Smoke Detection, *AICI 2010, Part I, Lecture Notes in Artificial Intelligence*, 6319: 389-396, 2010.
- [19] Z. Yuan, Y. Zhang, J. Zhao, Y. Ding, **C. Long**, et al. Real-time Simulation for 3D Tissue Deformation with Cuda Based GPU Computing. *Journal of Convergence Information Technology* 5(4): 209-119, 2010.
- [20] Y. Ding, J. Zhao, RS Goonetilleke, S. Xiong, Z. Yuan, Y. Zhang, **C. Long**. An Automatic Method of Measuring Foot Girths for Custom Footwear Using Local RBF Implicit Surfaces. *International Journal of Computer Integrated Manufacturing* 23(6): 574-583, 2010.
- [21] **C. Long**, J. Zhao, et al. Improvements on IPD Algorithm for Triangular Mesh Reconstruction from 3D Point Cloud, In *Proc. MINES*, Pages 305-308, 2009.
- [22] Y. Zhang, J. Zhao, Z. Yuan, Y. Ding, **C. Long**, et al. Cuda Based GPU Programming to Simulate 3D Tissue Deformation. In *Proc. ICBECS*, 2010.
- [23] J. Huang, J. Zhao, W. Gao, **C. Long**, et al. Local Binary Pattern Based Texture Analysis for Visual Fire Recognition, In *Proc. CISP*, 1887-1891, 2010.
- [24] J. Zhao, **C. Long**, et al. A New K-Nearest Neighbors Search Algorithm Based on 3D Cell Grids. *Geomatics and Information Science of Wuhan University*, 34(5):615-618, 2009.
- [25] L. Rao, J. Zhao, Z. Yuan, **C. Long**, et al. A Ray-based Method for 3D Model's Comparison by Genetic Algorithm, *Journal of Advances in Systems Science and Applications*, 9(3): 580-586, 2009.
- [26] Y. Ding, J. Zhao, **C. Long**, et al. Measurement Simulation on RBF Surface Reconstruction from 3D Point Cloud. *Geomatics and Information Science of Wuhan University*, 33: 90-92, 2008.
- [27] Y. Ding, J. Zhao, Y. Zhang, **C. Long**, et al. Efficiency Improvements for RBF Based Surface Measurement from 3D Point Cloud. In *Proc. IITA*, 733-736, 2008.
- [28] Y. Ding, J. Zhao, Z. Li, A. Yao, L. Rao, **C. Long**. Improvements on Electric Field Based Curve Reconstruction form Unorganized Points. In *Proc. Intelligent Information Technology Application Workshop*, 218-221, 2007.
- [29] Y. Ding, J. Zhao, RS Goonetilleke, L. Rao, A. Yao, **C. Long**. Partial Surface Reconstruction and Applications from Point Cloud Using RBF. *Journal of Computational Information Systems*, 3(6):2479-2485, 2007.

## PATENTS

- [P1] J. Zhao, **C. Long**, D. Zhang, Z. Yuan. Smoke and fire object segmentation method aiming at smog covering scene in fire disaster image video. Application No.: CN201210040236, Publication No.: CN102609710B, Filed on Feb 22, 2012.

## HONORS

- \* Marquis Who's Who in America (top 3% of the professionals in America), 2016.
- \* Certificate of Reviewing Award, Computer Vision and Image Understanding (CVIU), Aug, 2016.
- \* Publishing Pro Merit Badge, Kitware Inc., 2016.
- \* Scholarship from Chinese Mao Economic Promotion Association, 2011.
- \* Outstanding Graduate with Master Degree of Wuhan University, 2011.
- \* First Prize of Academic Research Grant Award in Hubei Province, 2009.
- \* Outstanding Graduate with Bachelor Degree of Wuhan University, 2009.
- \* Excellent Bachelor Degree Thesis in Hubei Province, 2009.
- \* Citibank's Scholarship from Citi Group, 2008.
- \* National Scholarship from Ministry of Education of the P.R. China, 2006.
- \* 1st/2nd Scholarship form Wuhan University, 2006-2011.
- \* Outstanding Student at Wuhan University, 2006-2011.

## ACADEMIC ACTIVITIES

### Reviewer for International Journals & Conferences:

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Salt Lake, Utah, USA, June 18-22, 2018.
- IEEE Transactions on Image Processing (TIP), 2016&2017.
- Computer Vision and Image Understanding (CVIU), 2016&2017.
- International Journal of Machine Vision and Applications (MVAP), 2015&2016&2017.
- Frontiers of Information Technology & Electronic Engineering (ZUSC), 2015&2016&2017.
- The Visual Computer (TVCJ), 2015&2016&2017.
- Journal of Visual Communication and Image Representation (JVCI), 2017.
- The 2017 ACM Multimedia Conference (ACM MM), Mountain View, CA, USA, Oct 23-27, 2017.
- IEEE International Conference of Computer Vision (ICCV), Venice, Italy, Oct 22-29, 2017.
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Honolulu, Hawaii, USA, July 21-26, 2017.
- IEEE International Conference on Image Processing (ICIP), Beijing, China, Sept 17-20, 2017.
- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), New Orleans, USA, Mar 5-9, 2017.
- IEEE International Conference on Multimedia and Expo (ICME), Hong Kong, China, July 10-14, 2017.
- IEEE Multimedia (MM), 2016&2017.
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2016&2017.
- IEEE International Conference on Image Processing (ICIP), Phoenix, Arizona, USA, Sept 25-28, 2016.

- IEEE International Conference on Multimedia and Expo (ICME), Seattle, USA, July 11-15, 2016.
- IEEE International Conference of Computer Vision (ICCV), Santiago, Chile, December 11-18, 2015.
- The 26th British Machine Vision Conference (BMVC), Swansea, UK, September 7-10, 2015.
- 7th IEEE International Conference on Biometrics: Theory, Applications and Systems (BTAS), Arlington, Virginia in the Washington, DC, September 8-11, 2015.
- IEEE International Conference on Multimedia and Expo (ICME), Torino, Italy, June 29-July 3, 2015.
- 11th IEEE Workshop on Perception Beyond the Visible Spectrum (PBVS), Boston, MA, June 11th, 2015 (in conjunction with IEEE CVPR 2015).
- International Workshop on Biometrics in the Wild (B-Wild), Ljubljana, May 8, 2015 (in conjunction with IEEE FG 2015).
- European Conference on Computer Vision (ECCV), Zurich, September 6-12, 2014.
- The 12th Asian Conference on Computer Vision (ACCV), Singapore, November 1-5, 2014.
- IEEE International Conference on Multimedia and Expo (ICME), Chengdu, China, July 14-18, 2014.

**Invited/Contributed Talks:**

- “A C3D-based Convolutional Neural Network for Frame Dropping Detection in a Single Video Shot”.
  - ◊ *CVPR Conference Workshop on Media Forensics, (Honolulu, HI) July 26, 2017.*
- “Dropped Frame Detection”.
  - ◊ *DARPA Medifor Sept Site Meeting (Clifton Park, NY) Sept 29, 2017.*
  - ◊ *DARPA Medifor Year-1 PI Meeting (Arlington, VA) June 26, 2017.*
- “Collaborative Active Learning from Crowds and Deep Learning for Visual Recognition”.
  - ◊ *China Agricultural University. (Beijing, China) Jan 16, 2017.*
- “Collaborative Gaussian Processes for Visual Recognition”.
  - ◊ *Stevens Institute of Technology (Hoboken, NJ) Oct 6, 2015.*
  - ◊ *Kitware Inc. (Clifton Park, NY) Nov 12, 2015.*
  - ◊ *Samsung Semiconductor Inc. (San Diego, CA) Nov 4, 2015.*
  - ◊ *Blippar (Mountain View, CA) Dec 23, 2015.*
  - ◊ *Siemens Healthcare (Princeton, NJ) Dec 13, 2015.*
- “Deep Learning to Fine Camera Pose Estimation Based on CAD Model”.
  - ◊ *Stevens Institute of Technology (Hoboken, NJ) Sep 15, 2015.*
  - ◊ *GE Global Research (Niskayuna, NY) Aug 21, 2015.*
- “Correlational Gaussian Processes for Cross-domain Visual Recognition”.
  - ◊ *Stevens Institute of Technology (Hoboken, NJ) Dec 9, 2014.*

- “Location Relaxation for Efficient and Accurate Object Detection”.
  - ◊ *Stevens Institute of Technology (Hoboken, NJ)* *May 28, 2014.*
- “From Analyzing to Modeling Crowds: A Collaborative Active Learning Approach to Computer Vision”.
  - ◊ *Stevens Institute of Technology (Hoboken, NJ)* *Nov 11, 2013.*
- “Accurate Object Detection with Selective Search”.
  - ◊ *Stevens Institute of Technology (Hoboken, NJ)* *Aug 28, 2013.*
  - ◊ *NEC Laboratories America (Cupertino, CA)* *Aug 21, 2013.*

**LANGUAGES**      Mandarin Chinese & English.

**SKILLS**            **Programming Languages/Libraries:** C++, C, C#, Java, Python, M, R, PHP, HTML, JavaScript, Latex, OpenGL, OpenCV, OpenMP, Vifeat, OpenGM, libDAI, Intel MKL, Direct3D, Boost C++ Libraries, Caffe, TensorFlow, PyTorch, VTK, OGRE 3D, Gazebo, Ignition, Eigen, SDFFormat, assimp, FreeImage.

**Development Tools:** Microsoft Visual Studio.net, G++/GCC/Vim, CMake, Matlab, RStudio, NetBeans, Eclipse, ParaView, Delcam CopyCAD and MeshLab.

**Development Platforms:** Windows, Linux, Mac OS X, Windows Mobile, Cuda.

**CITIZENSHIP**      China, O-1 Visa in America.

**MEMBERSHIP**      Member, the IEEE. Mar 2012 - present