Lingxi Xie

Room 246, Malone Hall, the Johns Hopkins University, Baltimore, MD 21218, USA
EMail: 198808xc@gmail.com
Homepage: http://lingxixie.com/

Title	Post-doctoral Researcher (supervised by Prof. Alan Yuille) Department of Computer Science, the Johns Hopkins University

Education Background

- 2010.09 – 2015.07, **Ph.D. in Engineering**
  Department of Computer Science and Technology, Tsinghua University
  Advisor: Prof. Bo Zhang and Prof. Qi Tian

- 2006.09 – 2010.07, **Bachelor in Engineering**
  Department of Computer Science and Technology, Tsinghua University

Working Experience

- 2016.06 – Present, **Post-doctoral Researcher**
  The Johns Hopkins University (*Advisor*: Prof. Alan Yuille)

- 2015.10 – 2016.04, **Post-doctoral Researcher**
  University of California, Los Angeles (*Advisor*: Prof. Alan Yuille)

- 2014.09 – 2015.06, **Research Intern**
  Microsoft Research Asia (*Advisor*: Dr. Jingdong Wang)

- 2014.02 – 2014.08, **Visiting Researcher**
  The University of Texas at San Antonio (*Advisor*: Prof. Qi Tian)

- 2013.08 – 2014.01, **Research Intern**
  Microsoft Research Asia (*Advisor*: Dr. Jingdong Wang)

Research Interests

Computer Vision and Multimedia Information Retrieval
- Large-scale image classification
- Fine-grained object recognition
- Large-scale and fine-grained image search
- Statistical learning algorithms

Deep Learning: Theory and Algorithms
- The Convolutional Neural Network (CNN)
- Medical imaging analysis

Publications

Ph.D. Thesis
- **Lingxi Xie**, "Image Representation Models based on Local Features: Theory and Practise" (in Chinese), Tsinghua University (Outstanding Ph.D. Thesis), June, 2015.

Peer-Reviewed Conference Papers
- **Lingxi Xie** and Alan Yuille, "Genetic CNN", in International Conference on Computer Vision, (**ICCV**, Acceptance Rate $\approx 29\%$), pages 1379–1388, Venice, Italy, 2017.

- **Lingxi Xie**, Qi Tian, John Flynn, Jingdong Wang and Alan Yuille, "Geometric Neural Phrase Pooling: Modeling the Spatial Co-occurrence of Neurons", in European Conference on Computer Vision (**ECCV**, Acceptance Rate ≈ 30%), pages 645–661, Amsterdam, The Netherlands, 2016.

- **Lingxi Xie**⋆, Liang Zheng⋆, Jingdong Wang, Alan Yuille and Qi Tian (⋆ indicates equal contribution), "InterActive: Inter-Layer Activeness Propagation", in IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**, Acceptance Rate ≈ 30%), pages 270–279, Las Vegas, Nevada, USA, 2016.

- **Lingxi Xie**, Jingdong Wang, Zhen Wei, Meng Wang and Qi Tian, "DisturbLabel: Regularizing CNN on the Loss Layer", in IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**, Acceptance Rate ≈ 30%), pages 4753–4762, Las Vegas, Nevada, USA, 2016.

- **Lingxi Xie**, Jingdong Wang, Weiyao Lin, Bo Zhang and Qi Tian, "RIDE: Reversal Invariant Descriptor Enhancement", in IEEE International Conference on Computer Vision (**ICCV**, Acceptance Rate ≈ 30%), pages 100–108, Santiago, Chile, 2015.

- **Lingxi Xie**, Qi Tian, Richang Hong and Bo Zhang, "Image Classification and Retrieval are ONE", in ACM International Conference on Multimedia Retrieval (**ICMR**, **Full Paper**, **Oral Presentation**, Acceptance Rate ≈ 20%), **Best Paper Award**, pages 3–10, Shanghai, China, 2015.

- **Lingxi Xie**, Qi Tian and Bo Zhang, "Generalized Regular Spatial Pooling for Image Classification", in IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**, Acceptance Rate ≈ 40%), pages 1374–1378, Brisbane, Australia, 2015.

- **Lingxi Xie**, Qi Tian, Jingdong Wang and Bo Zhang, "Image Classification with Max-SIFT Descriptors", in IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**, Acceptance Rate ≈ 40%), pages 1369–1373, Brisbane, Australia, 2015.

- **Lingxi Xie**, Qi Tian and Bo Zhang, "Max-SIFT: Flipping Invariant Descriptors for Web Logo Search", in IEEE International Conference on Image Processing (**ICIP**, Acceptance Rate ≈ 40%), pages 5716–5720, Paris, France, 2014.

- **Lingxi Xie**, Jingdong Wang, Baining Guo, Bo Zhang and Qi Tian, "Orientational Pyramid Matching for Recognizing Indoor Scenes", in IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**, Acceptance Rate ≈ 30%), pages 3734–3741, Columbus, Ohio, USA, 2014.

- **Lingxi Xie**, Qi Tian, Richang Hong, Shuicheng Yan and Bo Zhang, "Hierarchical Part Matching for Part-Based Visual Categorization", in IEEE International Conference on Computer Vision (**ICCV**, Acceptance Rate ≈ 30%), pages 1641–1648, Sydney, Australia, 2013.

- **Lingxi Xie**, Qi Tian and Bo Zhang, "Feature Normalization for Part-Based Image Classification", in IEEE International Conference on Image Processing (**ICIP**, **Oral Presentation**, Acceptance Rate ≈ 15%), pages 2607–2611, Melbourne, Australia, 2013.

- **Lingxi Xie**, Qi Tian and Bo Zhang, "Spatial Pooling of Heterogeneous Features for Image Applications", in ACM Internatinal Conference on Multimedia (**ACM-MM**, **Full Paper**, **Oral Presentation**, Acceptance Rate ≈ 20%), pages 539–548, Nara, Japan, 2012.

Peer-Reviewed Journal Papers

- **Lingxi Xie**, Jingdong Wang, Weiyao Lin, Bo Zhang and Qi Tian, "Towards Reversal-Invariant Image Representation", in International Journal on Computer Vision (**IJCV**), DOI: 10.1007/s11263-016-0970-x, 123(2), pages 226–250, 2017.

- **Lingxi Xie**, Qi Tian and Bo Zhang, "Simple Techniques Make Sense: Feature Pooling and Normalization for Image Classification", in IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), DOI: 10.1109/TCSVT.2016.2461978, 26(7), pages 1251–1264, 2016.

- **Lingxi Xie**, Jingdong Wang, Bo Zhang and Qi Tian, "Incorporating Visual Adjectives for Image Classification", in **Neurocomputing**, DOI: 10.1016/J.NEUCOM.2015.12.008, 182, pages 48–55, 2015.

- **Lingxi Xie**, Qi Tian, Wengang Zhou and Bo Zhang, "Heterogeneous Graph Propagation for Large-Scale Web Image Search", in IEEE Transactions on Image Processing (**TIP**), DOI: 10.1109/TIP.2015.2432673, 24(11), pages 4287–4298, 2015.

- **Lingxi Xie**, Jingdong Wang, Bo Zhang and Qi Tian, "Fine-Grained Image Search", in IEEE Transactions on Multimedia (**TMM**), DOI: 10.1109/TMM.2015.2408566, 17(5), pages 636–647, 2015.

- **Lingxi Xie**, Qi Tian, Wengang Zhou and Bo Zhang, "Fast and Accurate Large-Scale Web Image Search via Graph Propagation and Search Process Tradeoff", in Computer Vision and Image Understanding (**CVIU**) Special Issue on Large Scale Multimedia Semantic Indexing (LSMSI), DOI: 10.1016/J.CVIU.2013.12.011, 124, pages 31–41, 2014.

- **Lingxi Xie**, Qi Tian, Meng Wang and Bo Zhang, "Spatial Pooling of Heterogeneous Features for Image Classification", in IEEE Transactions on Image Processing (**TIP**), DOI: 10.1109/TIP.2014.2310117, 23(5), pages 1994–2008, 2014.

Co-Authored Peer-Reviewed Conference Papers

- Qihang Yu, **Lingxi Xie**, Yan Wang, Yuyin Zhou, Elliot Fishman and Alan Yuille, "Recurrent Saliency Transformation Network: Incorporating Multi-Stage Visual Cues for Small Organ Segmentation", in IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**, Acceptance Rate ≈ 30%), Salt Lake City, Utah, USA, 2018.

- Zhishuai Zhang, Cihang Xie, Jianyu Wang, **Lingxi Xie** and Alan Yuille, "Deep-Voting: An Explainable Framework for Semantic Part Detection under Partial Occlusion", in IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**, Acceptance Rate ≈ 30%), Salt Lake City, Utah, USA, 2018.

- Yan Wang, **Lingxi Xie**, Chenxi Liu, Siyuan Qiao, Ya Zhang, Wenjun Zhang, Qi Tian and Alan Yuille, "SORT: Second-Order Response Transform for Visual Recognition", in International Conference on Computer Vision, (**ICCV**, Acceptance Rate ≈ 29%), pages 1359–1368, Venice, Italy, 2017.

- Cihang Xie*, Jianyu Wang*, Zhishuai Zhang*, Yuyin Zhou, **Lingxi Xie** and Alan Yuille, "Adversarial Examples for Semantic Segmentation and Object Detection", in International Conference on Computer Vision, (**ICCV**, Acceptance Rate ≈ 29%), pages 1369–1378, Venice, Italy, 2017.

- Yuyin Zhou, **Lingxi Xie**, Wei Shen, Yan Wang, Elliot Fishman and Alan Yuille, "A Fixed-Point Model for Pancreas Segmentation in Abdominal CT Scans", in International Conference on Medical Image Computing and Computer Assisted

Intervention (**MICCAI**, Acceptance Rate $\approx$ 32%), volume 1, pages 693–701, Quebec City, Quebec, Canada, 2017.

- Yuyin Zhou, **Lingxi Xie**, Elliot Fishman and Alan Yuille, "Deep Supervision for Pancreatic Cyst Segmentation in Abdominal CT Scans", in International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**, Acceptance Rate $\approx$ 32%), volume 3, pages 222–230, Quebec City, Quebec, Canada, 2017.

- Jianyu Wang*, Cihang Xie*, Zhishuai Zhang*, Jun Zhu, **Lingxi Xie** and Alan Yuille, "Detecting Semantic Parts on Partially Occluded Objects", in British Machine Vision Conference (**BMVC**, Acceptance Rate $\approx$ 30%), volume 307, pages 1–12, London, UK, 2017.

- Zhuotun Zhu, **Lingxi Xie** and Alan Yuille, "Object Recognition with and without Objects", in International Joint Conference on Artificial Intelligence (**IJCAI**, Acceptance Rate $\approx$ 26%), pages 3609–3615, Melbourne, Australia, 2017.

- Zhansheng Jiang, **Lingxi Xie**, Xiaotie Deng, Weiwei Xu and Jingdong Wang, "Fast Nearest Neighbor Search in the Hamming Space", in International Conference on Multimedia Modeling (**MMM**, **Oral Presentation**, Acceptance Rate $\approx$ 20%), pages 325–336, Miami, Florida, USA, 2016.

- Lingyun Li, Yanqing Guo, **Lingxi Xie**, Xiangwei Kong and Qi Tian, "Fine-Grained Visual Categorization with Fine-Tuned Segmentation", in IEEE International Conference on Image Processing (ICIP, **Oral Presentation**, Acceptance Rate $\approx$ 15%), pages 2025–2029, Quebec City, Canada, 2015.

Services

Technical Program Committee (TPC) member
- ACM Internatinal Conference on Multimedia (ACM-MM), Amsterdam, The Netherlands, 2016.
- Pacific-Rim Conference on Multimedia (PCM), Xi'an, China, 2016.
- ACM Internatinal Conference on Multimedia (ACM-MM), Orlando, Florida, USA, 2014.
- ACM Internatinal Conference on Multimedia (ACM-MM), Barcelona, Spain, 2013.

Conference Paper Reviewer
- ACM Annual International SIGIR Conference (SIGIR).
- ACM International Conference on Multimedia Modeling (MMM).
- ACM International Conference on Multimedia Retrieval (ICMR).
- ACM International Conference on Multimedia (ACM-MM).
- European Conference on Computer Vision (ECCV).
- IEEE International Conference on Pattern Recognition (ICPR).
- IEEE International Conference on Multimedia and Expo (ICME).
- IEEE International Conference on Computer Vision and Pattern Recognition (CVPR).
- IEEE China Summit and International Conference on Signal and Information Processing (ChinaSIP).
- IEEE International Conference on Image Processing (ICIP).
- International Conference on Advanced Computational Intelligence (ICACI).

- International Conference on Visual Communications and Image Processing (V-CIP).
- Pacific-Rim Conference on Multimedia (PCM).

Journal Paper Reviewer
- ACM Transactions on Multimedia Computing Communications and Applications (TOMM).
- Data Mining and Knowledge Discovery (DMKD).
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT).
- IEEE Transactions on Image Processing (TIP).
- IEEE Transactions on Multimedia (TMM).
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS).
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI).
- Journal of Multimedia (JMM).
- Journal of Visual Communication and Image Representation (JVCIR).
- Machine Vision and Applications (MVAP).
- Multimedia Systems.
- Neurocomputing.
- Signal Processing: Image Communication.

Scholarship Awards
- **Outstanding Reviewer**, European Conference on Computer Vision, 2016.
- **Outstanding Ph.D. Thesis**, Tsinghua University, 2015.
- **Best Paper Award**, ACM International Conference of Multimedia Retrieval (ICMR), 2015.

Other Awards
- **Outstanding Ph.D. Graduate**, Beijing City, 2015.
- **Outstanding Ph.D. Graduate**, Tsinghua University, 2015.
- **National Scholarship**, Tsinghua University, 2014.
- **Comprehensive Scholarship**, Tsinghua University, 2013.
- **Grand Prize**, "Challenge Cup" National Undergraduate Curricular Academic Science and Technology Works by Race, 2009.
- **National Scholarship**, Tsinghua University, 2007.
- **Silver Medal**, Chinese Mathematical Olympiad (CMO), 2006.

Grants
- **Best Paper Award**, USD1000, ACM International Conference of Multimedia Retrieval (ICMR), 2015.
- **Student Travel Grant**, USD450, IEEE International Conference on Computer Vision (ICCV), Sydney, Australia, 2013.
- **Student Travel Grant**, USD800, IEEE International Conference on Image Processing (ICIP), Melbourne, Australia, 2013.
- **Student Travel Grant**, JPY40000, ACM International Conference on Multimedia (ACM-MM), Nara, Japan, 2012.