

# YUEQI DUAN

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## EDUCATION

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**Department of Automation, Tsinghua University** Sep. 2014 - Jun. 2019 (expected)

Ph.D., Computer Vision and Pattern Recognition

Thesis: Unsupervised Binary Representation Learning for Visual Recognition

Advisor: Prof. Jie Zhou and Prof. Jiwen Lu

**Department of Automation, Tsinghua University** Sep. 2010 - Jul. 2014

B.Eng., Automation

## PUBLICATIONS

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### Journal Papers

[1] **Y. Duan**, J. Lu, Z. Wang, J. Feng, and J. Zhou, Learning Deep Binary Descriptor with Multi-Quantization, *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, 2018, accepted.

[2] **Y. Duan**, J. Lu, J. Feng, and J. Zhou, Context-Aware Local Binary Feature Learning for Face Recognition, *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, vol. 40, no. 5, pp. 1139-1153, 2018.

[3] **Y. Duan**, J. Lu, J. Feng, and J. Zhou, Deep Localized Metric Learning, *IEEE Trans. on Circuits and Systems for Video Technology (TCSVT)*, vol. 28, no. 10, pp. 2644-2656, 2018.

[4] **Y. Duan**, J. Lu, J. Feng, and J. Zhou, Topology Preserving Structural Matching for Automatic Partial Face Recognition, *IEEE Trans. on Information Forensics and Security (TIFS)*, vol. 13, no. 7, pp. 1823-1837, 2018.

[5] **Y. Duan**, J. Lu, J. Feng, and J. Zhou, Learning Rotation-Invariant Local Binary Descriptor, *IEEE Trans. on Image Processing (TIP)*, vol. 26, no. 8, pp. 3636-3651, 2017.

### Conference Papers

[1] **Y. Duan**, W. Zheng, X. Lin, J. Lu, and J. Zhou, Deep Adversarial Metric Learning, *IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, pp. 2780-2789, 2018. (**Spotlight**).

[2] **Y. Duan**, Z. Wang, J. Lu, X. Lin, and J. Zhou, GraphBit: Bitwise Interaction Mining via Deep Reinforcement Learning, *IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, pp. 8270-8279, 2018.

[3] X. Lin, **Y. Duan**, Q. Dong, J. Lu, and J. Zhou, Deep Variational Metric Learning, *European Conf. on Computer Vision (ECCV)*, pp. 689-704, 2018.

[4] **Y. Duan**, J. Lu, Z. Wang, J. Feng, and J. Zhou, Learning Deep Binary Descriptor with Multi-Quantization, *IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, pp. 4857-4866, 2017.

[5] **Y. Duan**, J. Lu, J. Feng, and J. Zhou, Topology Preserving Graph Matching for Partial Face Recognition, *IEEE International Conf. on Multimedia and Expo (ICME)*, pp. 1494-1499, 2017. (**Oral**).

### Under Submission

[1] **Y. Duan**, J. Lu, W. Zheng, and J. Zhou, Deep Adversarial Metric Learning, *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, under review.

[2] **Y. Duan**, H. Zhu, C. Li, J. Lu, and J. Zhou, Unsupervised 3D Feature Learning via Point Cloud Completion, conference submission.

[3] **Y. Duan**, Z. Yu, J. Lu, J. Zhou, and Q. Tian, Structural Relational Reasoning of Point Clouds, conference submission.

[4] **Y. Duan**, J. Lu, and J. Zhou, UniformFace: Learning Deep Equidistributed Representation for Face Recognition, conference submission.

[5] **Y. Duan**, L. Chen, J. Lu, and J. Zhou, Deep Embedding Learning with Discriminative Sampling Policy, conference submission.

[6] C. Lin\*, **Y. Duan\***, J. Lu, G. Wang, and J. Zhou, Occlusion-Aware Self-Supervised Learning for Pedestrian Detection, conference submission.

## RESEARCH EXPERIENCE

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### Unsupervised Binary Representation Learning

Ph.D. Student, Tsinghua University

- We study two key problems of unsupervised binary representation learning: 1) data-dependent binarization for quantization loss minimization, and 2) bitwise interaction mining for feature-level self-supervision.

### Deep Metric Learning

Ph.D. Student, Tsinghua University

- Sampling matters in deep metric learning. We tap the potentials of easy samples by generating synthetic samples from the original ones, where the generated samples present higher effectiveness in model training. We also design a deep sampler network (DSN) to adaptively select effective training samples through deep reinforcement learning.

### 3D Vision

Ph.D. Student, Tsinghua University

- We investigate the effectiveness of the point cloud completion task to provide plenty and free supervision signals for unsupervised 3D feature learning, which achieves comparable results to supervised methods. We also propose an effective plug-and-play module to reason about the structural dependencies of local regions in 3D point clouds.

## PROFESSIONAL ACTIVITIES

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### Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Image Processing
- IEEE Transactions on Circuits and Systems for Video Technology
- IEEE Transactions on Information Forensics and Security
- IEEE/CVF Conference on Computer Vision and Pattern Recognition
- IEEE International Conference on Multimedia and Expo

## AWARDS

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- National Scholarship, Tsinghua University (2017, 2018)
- Outstanding Reviewer Award of ICME (2018)
- Outstanding Scholar, Department of Automation, Tsinghua University (2017)
- Champion of ABAC Chess Competition in Mallorca, Spain (2011)

## REFERENCE

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### Jie Zhou

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### Jiwen Lu

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- Associate Professor
- Email: lujiwen@tsinghua.edu.cn