

YUEQI DUAN

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Room 624, Main Building, Tsinghua University, Beijing, China

EDUCATION

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

Ph.D., Pattern Recognition and Intelligent Systems

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

RESEARCH EXPERIENCE

Unsupervised Binary Representation Learning Ph.D. Student, Tsinghua University

- Binary representations are efficient for storage and matching, while existing models usually learn high-dimensional real-valued features with redundancies.
- Unsupervised learning directly exploits unlabeled raw data that is easy to acquire. Without strong constraints of human-provided labels, it may become the key towards common sense.
- Meet the requirements for mobile robots: 1) limited computation, storage and data transmission capability, and 2) unlabeled online data for model retraining.
- Two keys for unsupervised binary representation learning: 1) data-dependent binarization for quantization loss minimization, and 2) bitwise interaction mining for feature-level self-supervision.

PUBLICATIONS

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)*, 2018, accepted.
- [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)*, 2018, accepted.
- [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**).