Haotong Qin

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EDUCATION

Ph.D.   Shen Yuan Honors College, Beihang University, 2019–

B.S.   School of Computer Science and Engineering, Beihang University, 2015–19

RESEARCH INTERESTS

Network binarization and quantization   Neural architecture design and search

Hardware implementation of compact network   Image synthesizing

3D point cloud processing   Few/Zero-shot learning

APPOINTMENTS AND INTERNSHIPS

2020   Tencent Holdings Ltd.
         Research Intern, WeiXin Group
         Accelerating the Recommendation System Based on Graph Neural Network

2018–19 Microsoft Research Asia
         Research Intern, Speech Group
         Building an Extremely Efficient Deep Learning System for Character Recognition

PUBLICATIONS

Conference Proceedings

2021   **Haotong Qin***, Zhongang Cai*, Mingyuan Zhang*, Yifu Ding, Haiyu Zhao, Shuai Yi, Xianglong Liu, Hao Su (* indicates equal contribution). BiPointNet: Binary Neural Network for Point Clouds[C] //Proceedings of the *International Conference on Learning Representations* (ICLR). 2021.

2021   Xiangguo Zhang*, **Haotong Qin***, Yifu Ding, Ruihao Gong, Qinghua Yan, Renshuai Tao, Yuhang Li, Fengwei Yu, Xianglong Liu (* indicates equal contribution). Diversifying Sample Generation for Data-Free Quantization[C] //Proceedings of the *IEEE/CVF Conference on Computer Vision and Pattern Recognition* (CVPR). Oral presentation. 2021.

2021   Hainan Li, Renshuai Tao, Jun Li, **Haotong Qin**, Yifu Ding, Shuo Wang, Xianglong Liu. Multi-pretext Attention Network for Few-shot Learning with Self-supervision[C] //Proceedings of the *IEEE International Conference on Multimedia and Expo* (ICME). 2021.

2020   **Haotong Qin**, Ruihao Gong, Xianglong Liu, Mingzhu Shen, Ziran Wei, Fengwei Yu, Jingkuan Song. Forward and Backward Information Retention for Accurate Binary Neural Networks[C] //Proceedings of the *IEEE/CVF Conference on Computer Vision and Pattern Recognition* (CVPR). 2020.

Journal Articles

2020   **Haotong Qin**, Ruihao Gong, Xianglong Liu, Xiao Bai, Jingkuan Song, Nicu Sebe. Binary neural networks: A survey[J]. *Pattern Recognition*, 2020, 105: 107281.

2020   Yan Wu, Xianglong Liu, **Haotong Qin**, Ke Xia, Sheng Hu, Yuqing Ma, Meng Wang. Boosting Temporal Binary Coding for Large-Scale Video Search[J]. *IEEE Transactions on Multimedia* (TMM), 2020, 23: 353-364.

Patents

2021   Xianglong Liu, **Haotong Qin**, Yifu Ding, Zhongang Cai, Mingyuan Zhang. A Point Cloud-oriented Method and Device for Efficient Neural Network Binarization. *Chinese patent* CN112183731A.

2020   Xianglong Liu, **Haotong Qin**. A Method and Device for Generating Information Retention Network. *Chinese patent* CN111523637A.

2019   Xianglong Liu, Mingzhu Shen, **Haotong Qin**. A Method and System for Balanced Binary Neural Network Quantization. *Chinese patent* CN110472725A.

Manuscripts in Review

2021   **Haotong Qin**, Xiangguo Zhang, Ruihao Gong, Ziran Wei, Yi Xu, Xianglong Liu. Distribution-Sensitive Information Retention for Accurate Binary Neural Networks. Under review for *IEEE Transactions on Image Processing* (TIP). 2021.

2021   Renshuai Tao, Yanlu Wei, Xiangjian Jiang, Hainan Li, **Haotong Qin**, Jiakai Wang, Yuqing Ma, Libo Zhang, Xianglong Liu. Towards Real-world X-ray Security Inspection: A High-Quality Benchmark And Lateral Inhibition Module For Prohibited Items Detection. Under review for *International Conference on Computer Vision* (ICCV). 2021.

2021   Renshuai Tao, Yanlu Wei, Hainan Li, Aishan Liu, Yifu Ding, **Haotong Qin**, Xianglong Liu. Over-sampling De-occlusion Attention Network for Prohibited Items Detection in Noisy X-ray Images. Under review for *IEEE Transactions on Cybernetics* (Cybern). 2021.

2021   Yan Wu, Jiaxin Fan, Renshuai Tao, Jiakai Wang, **Haotong Qin**, Aishan Liu, Xianglong Liu. Sequential Alignment Attention Model for Scene Text Recognition. Under review for *Journal of Visual Communication and Image Representat* (JVCI). 2021.

MAIN HONORS AND FELLOWSHIPS

2021   Huawei Scholarship ($1,570)

2020   China National Scholarship ($4,636)

2020   Enrolled in Tencent Rhino-Bird Elite Training Program

2020   Beihang University First Prize Scholarship ($2,628)

2019   Beihang University Outstanding Freshman Scholarship ($4,636)

2019   *Summa Cum Laude*, Beihang University

2019   ICPC China National Invitational Contest (Nanchang, China)   Gold Medal

2018   ACM-ICPC Chinese Collegiate Programming Contest (Shizuishan, China)   Gold Medal

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