

Zhen CHEN

Room 2325, AC1, City University of Hong Kong, Kowloon, Hong Kong SAR.

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EDUCATION

- City University of Hong Kong (CityU)**, Hong Kong SAR Sep. 2018 - Present
Ph.D. Candidate in Electrical Engineering
Supervisor: Prof. Yixuan Yuan
 At USTC during Sep. 2018 - Jun. 2019 according to the Collaboration Scheme
- University of Science and Technology of China (USTC)**, Hefei, China Sep. 2016 - Jun. 2019
M.S. in MOE-Microsoft Key Laboratory of Multimedia Computing and Communication
Supervisor: Prof. Weiping Li and Prof. Zhibo Chen
 Thesis: Acceleration, Compression and Evaluation Methods on Deep Neural Networks
- Xi'an Jiaotong University (XJTU)**, Xi'an, China Sep. 2012 - Jun. 2016
B.S. in Information Engineering
 GPA: 89.76/100, Top 5%

EXPERIENCE

- Tencent**, Shenzhen, China May 2020 - Sep. 2020
Intern at Tencent AI Healthcare
Mentor: Dr. Xiao Han and Dr. Jun Zhang
- iFLYTEK**, Hefei, China Jul. 2019 - Aug. 2019
Researcher in Research and Development Group
 Histopathology images-based segmentation
- Hong Kong Baptist University**, Kowloon, Hong Kong SAR Jul. 2016 - Aug. 2016
Intern at Department of Computer Science
Mentor: Prof. Li Chen
- CASIA**, Beijing, China Jun. 2015 - Aug. 2015
Intern at National Laboratory of Pattern Recognition (NLPR)
Mentor: Prof. Stan Z. Li and Prof. Zhen Lei

RESEARCH INTERESTS

My research interests include **Medical Image Analysis**, **Neural Network Acceleration**, and **Machine Learning**.

PUBLICATIONS ([Google Scholar](#))

Journal Papers

1. **Zhen Chen**, Xiaoqing Guo, Peter Y. M. Woo, Yixuan Yuan. "Super-Resolution Enhanced Medical Image Diagnosis with Sample Affinity Interaction." *IEEE Transactions on Medical Imaging (TMI)*, 2021.

2. **Zhen Chen**, Zhibo Chen, Jianxin Lin, Sen Liu, Weiping Li. “Deep Neural Network Acceleration Based on Low-Rank Approximated Channel Pruning.” *IEEE Transactions on Circuits and Systems I: Regular Papers (TCAS-I)*, 2020.
3. Meilu Zhu, **Zhen Chen**, Yixuan Yuan. “DSI-Net: Deep Synergistic Interaction Network for Joint Classification and Segmentation with Endoscope Images.” *IEEE Transactions on Medical Imaging (TMI)*, 2021.
4. Wuyang Li, **Zhen Chen**, Baopu Li, Dingwen Zhang, Yixuan Yuan. “HTD: Heterogeneous Task Decoupling for Two-stage Object Detection.” *IEEE Transactions on Image Processing (TIP)*, accepted.

Conference Papers

1. **Zhen Chen***, Jun Zhang*, Shuanlong Che, Junzhou Huang, Xiao Han, Yixuan Yuan. “Diagnose Like A Pathologist: Weakly-Supervised Pathologist-Tree Network for Slide-Level Immunohistochemical Scoring.” *Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI 2021)*.
2. **Zhen Chen***, Meilu Zhu*, Chen Yang*, Yixuan Yuan. “Personalized Retrogress-Resilient Framework for Real-World Medical Federated Learning.” *International Conference on Medical Image Computing and Computer Assisted Interventions (MICCAI 2021, Student Travel Award)*, Strasbourg, France.
3. **Zhen Chen**, Xiaoqing Guo, Chen Yang, Bulat Ibragimov, Yixuan Yuan. “Joint Spatial-Wavelet Dual-Stream Network for Super-Resolution.” *International Conference on Medical Image Computing and Computer Assisted Interventions (MICCAI 2020)*, Lima, Peru.
4. **Zhen Chen**, Jianxin Lin, Sen Liu, Zhibo Chen, Weiping Li, Jin Zhao, Wei Yan. “Exploiting Weight-Level Sparsity in Channel Pruning with Low-Rank Approximation.” *2019 IEEE International Symposium on Circuits and Systems (ISCAS 2019)*, Sapporo, Japan.
5. **Zhen Chen**, Jianxin Lin, Sen Liu, Jun Xia, Weiping Li. “Decouple and Stretch: A Boost to Channel Pruning.” *2018 IEEE 37th International Performance Computing and Communications Conference (IPCCC 2018)*, Orlando, USA.
6. Xinyu Liu, Baopu Li, **Zhen Chen**, Yixuan Yuan. “Exploring Gradient Flow Based Saliency for DNN Model Compression.” *ACM International Conference on Multimedia (ACM MM 2021)*, Chengdu, China.
7. Xiaoqing Guo, **Zhen Chen**, Yixuan Yuan. “Complementary Network with Adaptive Receptive Fields for Melanoma Segmentation.” *IEEE International Symposium on Biomedical Imaging (ISBI 2020)*, Iowa City, USA.
8. Zikun Liu, **Zhen Chen**, Weiping Li. “Importance-Aware Filter Selection for Convolutional Neural Network Acceleration.” *2019 IEEE International Conference on Visual Communications and Image Processing (VCIP 2019)*, Sydney, Australia.

RESEARCH EXPERIENCES

Federated Learning in Medical

Dec. 2020 - May 2021

- Retrogress-resilient framework for real-world medical federated learning
- Progressive fourier aggregation at the server side
- Deputy-enhanced transfer strategy at the client side

Histopathology Images Analysis

Sep. 2019 - Oct. 2020

- Weakly-supervised pathologist-tree network for HER2 scoring
- Segmentation for colonoscopy tissue images
- Automatic staining for histopathology images

Super-Resolution Enhanced Diagnosis

Jan. 2020 - Oct. 2020

- Sample affinity interaction to improve diagnosis with super-resolution knowledge
- Recursion distillation scheme for efficient super-resolution
- Wavelet domain enhancement for super-resolution

Convolutional Neural Network Acceleration

Sep. 2017 - Jun. 2019

- Low-rank approximated channel pruning for CNNs acceleration
- Reinforcement learning-based pruning for CNNs acceleration
- Global perspective evaluation for efficiency of acceleration algorithms

Virtual Reality

Mar. 2015 - May 2017

- Saliency prediction in virtual reality environment
- Panorama image stitching

SELECTED AWARDS

- Xi'an Jiaotong University Outstanding Graduates Award
- Outstanding Student Leaders Award
- Outstanding Students Award (*twice*)
- MICCAI 2021 Student Travel Award
- National Inspirational Scholarship
- CityU Research Tuition Scholarship (RTS)
- Wenyuan Pan Scholarship
- Siyuan Scholarship

PROFESSIONAL ACTIVITIES**TPC Member**

- MICCAI-2021 Deep Generative Models Workshop, ICC-2021 CCNCPS Workshop, WoWMoM-2019 CCNCPS Workshop

Technical Reviewers

- ICRA, ISBI, ICASSP, GLOBECOM

LEADERSHIP

- Vice-Chair of Graduate Students Union, School of Information Science, USTC 2017 - 2018
- Vice-Chair of Senior Students Helping Club, Wenzhi College, XJTU 2014 - 2015
- Leader of XJTU English Club 2013 - 2014