Kehan Qi

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Education Background

Stony Brook University
Ph.D. Student in Biomedical Informatics, 2024.8-present

University of Chinese Academy of Sciences
Master of Engineering in Computer Technology, 2018.9 - 2021.7

Zhejiang University
Bachelor of Engineering in Measurement Control Technology and Instruments, 2013.9-2017.7

Employment Positions

Storicard Co Ltd, Hangzhou, China
Data Engineer, 2023.4 - present

Amazon, Beijing, China
Software Development Engineer, 2021.8-2023.2

Tencent Co Ltd, Shenzhen, China
Research Intern, 2020.6-2020.9

Research Experience

Brain Stroke Segmentation in MR Images

2018-2019

- **Methods**: Employ neural networks to segment brain stroke in MR images. Utilize network modules to address issues like long range dependencies, multi-scale features and diverse lesion locations.
- **Contribution**: Propose neural network modules to capture long range dependencies in one of the essays. Validate methods on public datasets. Write and publish one of the essays.
- **Papers**:
  Kehan Qi, Hao Yang, Cheng Li, Zaiyi Liu, Meiyun Wang, Qiegen Liu, and Shanshan Wang*. "X-Net: Brain Stroke Lesion Segmentation Based on Depthwise Separable Convolution and Long-range Dependencies". 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2019), Shenzhen, China, 2019. [PDF][code]

  Hao Yang, Weijian Huang, **Kehan Qi**, Cheng Li, Xinfeng Liu, Meiyun Wang, Hairong Zheng, and Shanshan Wang* "CLCI-Net: Cross-Level Fusion and Context Inference Networks for Lesion Segmentation of Chronic Stroke". 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2019), Shenzhen, China, 2019. [PDF][code]

  Xin Liu, Hao Yang, **Kehan Qi**, Pei Dong, Qiegen Liu, Xin Liu, Rongpin Wang*, and Shanshan Wang*. "MSDF-Net: Multi-scale deep fusion network for stroke lesion segmentation". IEEE Access, 2019. [PDF]

  Hao Yang, **Kehan Qi**, Xin Yu, Hairong Zheng, and Shanshan Wang*. "Multi-scale Entity Encoder-decoder Network Learning for Stroke Lesion Segmentation". International Society for Magnetic Resonance in Medicine (ISMRM) 2020.[Link]

MR Image Reconstruction and Segmentation

2020-2021

- **Method**: Utilize a two-module neural network and re-weighted loss to segment and reconstruct MR images simultaneously.
- **Contribution**: Propose a two-module neural network to segment and reconstruct MR image simultaneously. Propose training methods to balance the loss contribution on segmentation and reconstruction. Evaluate approaches on two open datasets and an in vivo in-house dataset. Write an essay and a conference poster.
- **Papers**:
  Kehan Qi, Yu Gong, Xinfeng Liu, Xin Liu, Hairong Zheng, and Shanshan Wang*. "Multi-task MR Imaging with Iterative Teacher Forcing and Re-weighted Deep Learning". arXiv preprint arXiv:2011.13614. [PDF]

  Kehan Qi, Yu Gong, Haoyun Liang, Xin Liu, Hairong Zheng, and Shanshan Wang*. "Multi-task MR imaging with deep learning". International Society for Magnetic Resonance in Medicine (ISMRM) 2021.[Link]

Reconstructed MR Image Quality Assessment

2020-2021

- **Method**: Employ a neural network to assess MR image quality. Utilize 3D spatial information of the medical images for better performance.
- **Contribution**: Propose 3D content-adaptive hyper network for blind MR image quality assessment. Evaluate proposed method on a public dataset. Write an assey.
- **Papers**:
  Kehan Qi, Haoran Li, Chuyu Rong, Yu Gong, Cheng Li, Hairong Zheng, and Shanshan Wang*. "Blind Image Quality Assessment for MRI with A Deep Three-dimensional content-adaptive Hyper-Network". arXiv preprint arXiv:2107.06888. [PDF] [code]