ZHIQI CHEN

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EDUCATION

New York University, New York   *September 2018 - Present*
Ph.D. student in Electrical Engineering   Overall GPA: 3.89
Department of Electrical and Computer Engineering
Coursework highlights: Probability and Stochastic Process, Advanced Machine Learning, Image and
Video Processing, Information Theory

Beihang University, Beijing   *September 2014 - June 2018*
Bachelor in Biomedical Engineering   Overall GPA: 3.7
School of Biological Science and Medical Engineering

RESEARCH INTEREST

Interested in deep learning techniques for sequence data and applications in medicine.

PROJECTS

Video Prediction through Dynamic Deformable Filter Network
Advisor: Prof. Yao Wang, Video Lab, NYU Tandon

- Built a Dynamic Deformable Filter Network (DDFN) for video prediction combining Dynamic Filter Network and Deformable Convolutional Neural Network.

- The model generates input-specific filter parameters and filter kernel offsets for input frames to synthesize the following frames. These dynamic filters and offsets can be viewed as a generalization of optical flow.

- Experiments demonstrates that DDFN is capable of learning the movement of moving objects in videos. DDFN outperforms state-of-art (Beyond MSE, McNet, DualGAN, PredRNN, PredRNN++) on MovingMNIST and KTH human action datasets regarding MSE, PSNR, and SSIM.

- Extended the model to more complex dataset, e.g., UCF-101, and compared with state-of-art method (DVF). This work is intended to be submitted to CVPR 2020. (ongoing)

Ganglion Cell Inner Plexiform Layer (GCIPL) Thickness Map Prediction for Glaucoma
Advisor: Dr. Hiroshi Ishikawa, Advanced Ophthalmic Imaging Laboratory, NYU Langone & Prof. Yao Wang, Video Lab, NYU Tandon

- Built a Time-Aware Convolutional LSTM to predict Glaucoma Patients' next-visit GCIPL thickness maps based on past four visits.

- Added time gate to LSTM which takes elapsed time between two visits as input and generates a time penalty to solve variant time interval problem.

- Achieved 0.00062 of MSE, 32.40 of PSNR, and 0.9588 of SSIM.

- Finalized as a paper to be submitted to IEEE International Symposium on Biomedical Engineering. (ongoing)

TECHNICAL STRENGTHS

Languages	Python (proficient), MATLAB (proficient), JAVA (familiar), C++ (familiar)
Software & Tools	Pytorch, Tensroflow, Git, LaTeX