Zhaochen Shi

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Education

Northwestern University *Evanston*
M.S. in Electrical Engineering *Sep. 2019 - Present*
- Advisor: Prof. Thrasyvoulos (Thrasos) N. Pappas
- Relevant Courses: Machine Learning, Intro. to Computer Vision, Human Computer Interaction, Human Perception and Electronic Media, Digital Signal Processing, Computational Photography Seminar
- GPA: 3.97/4.0

Beijing University of Posts and Telecommunications *Beijing*
B.S.Eng. Telecommunications Engineering with Management *Sep. 2015 - Jun. 2019*
- Joint Program with Queen Mary University of London
- Graduation Project(Thesis) advisor: Dr.Marie-Luce Bourguet
- Honorable Mention of MCM/ICM (02/2018)

Queen Mary University of London *London*
B.Sc(Eng) with Honours - Second Class (Upper Division) *Sep. 2015 - Jun. 2019*
- Joint Program with Beijing University of Posts and Telecommunications
- Major: Telecommunications Engineering with Management
- GPA: 3.41/4.0 (Transformed by Second Class(Upper Division))

Research Experience

Northwestern University - Comp Photo Lab *Evanston, IL*
Advisor: Prof. Oliver Cossairt *Dec. 2019 - Present*
- Participated in experiment set-up to capture focal-sweep dataset for Deep-Learning image restoration.
- Captured small aperture images in low-light condition for denoised purpose.
- Worked on radiometric and geometric calibration in order to prepare the dataset for training process.
- Used traditional deconvolution method Tikhonov, and TV-deconvolution, Deep-Learning model SRN-deblur, DeblurGAN-V2 and the DeepDeblur on the dataset that been captured.
- Compared the testing results on different method, and captured new dataset with random focal-sweep range. Trained deconv/deblur network with random focal sweep range dataset. Applied network to real-world focal sweep images to compare the result between deblurred images and denoised small aperture images.

Northwestern University - EE department *Evanston, IL*
Advisor: Prof. Thrasyvoulos (Thrasos) N. Pappas *Oct. 2019 - Present*
- Generated distortion images based on previous experiment parameters using different random seeds. Prepared the image data in training/validation/testing set for the purpose of training a metric to compare texture similarity between textures.
- Trained the model with the supervised dimensional reduction method Local Fisher Discriminant Analysis and regression neural networks. Compared the testing result with other methods including PSNR, STSIM-1, STSIM-2, STSIM-M and STSIM-I using Pearson's corrlation coefficient and Spearman's correlation coefficient.

Beijing University of Posts and Telecommunications - Switching and Intelligent Control Research Center *Beijing*
Advisor: Prof. Peng Xu *Mar. 2018 - Sep. 2018*
- Participated in the upgrading and maintenance of data visualization project with other graduate students.
- Labeled images for image segmentation and recognition.
- Helped with capturing food images to train object recognition models to ensure that infants' daily nutritional intake meets the standard.

Internship

Tencent Technology (Beijing) Company Limited *Beijing*

Intern, front-end engineer *Jan. 2018- Apr. 2018*

- Participated in plug-in maintenance and update for Tencent news on Wechat platform
- Optimized the download page and share page
- Designed the floating window for downloading recommendation to Wechat friends independently
- Enhanced proficiency of front-end development with Html5, css3 and JavaScript, and reinforced knowledge of react framework through practical work

Presentations

Contributed Presentations

Extended Depth of Field using Focal Sweep with Focus Tunable Lenses. 2020. PhD Visit Day Poster and Demo Session: Northwestern University, EECS Department, Evanston, IL.

Twitter sentiment analysis based on COVID-19 tweets. 2020. COMP-ENG 510 Seminar: Social Media Mining, Evanston, IL.

OTHER SKILLS

Language: Mandarin (native), English (fluent)

Technology: Python, Pytorch, OpenCV, MATLAB, Javascript, React, Java, Struts2, Hibernate, Google docs / sheets / slides, Microsoft Office (Word, PowerPoint, Excel)