XUEJIAN RONG

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EDUCATION

2019 The City University of New York (CUNY), USA

Ph.D. in Electrical Engineering
Research Focus: Computer Vision & Machine Learning, specifically on Semantic Scene Understanding
Committee: Yingli Tian (chair), Ioannis Stamos, Jizhong Xiao, Zhigang Zhu, and Denis Demandolx
Thesis Proposal: Deep Features for Context-aware Text Extraction [slides]

2013 Nanjing University of Aeronautics and Astronautics (NUAA), China

B.E. in Control Science and Engineering   Outstanding Undergraduate Thesis Award

EXPERIENCES

05/2019-08/2019 Research Intern, Facebook Research. *Seattle, WA*

Mentor: Dr. Denis Demandolx

Worked in the Computational Photography Group on projects related to deep image restoration.

05/2018-12/2018 Research Intern, Siemens Corporate Research. *Princeton, NJ*

Mentor: Dr. Ziyan Wu

[Visual Representation Learning for Novel View Synthesis, 06/2018-11/2018]
Worked on the project to incrementally generate complete and consistent 2D or 3D scenes with learned scene priors, while real observations of an actual scene can be incorporated, and unobserved parts of the scene can be hallucinated. In the limit of observing real data at each point, our method converges to solving the SLAM problem. In the limit of never observing real data, it samples entirely imagined scenes from the prior distribution. Applications include autonomous driving and few-shot learning.

09/2013-04/2018 Research Assistant, Media Lab, CUNY. *New York, NY*

Mentor: Dr. Yingli Tian

[Visual-Linguistic Understanding on Scene Text Images, 09/2016-05/2018]
Designed new deep neural networks to model the relationship between scene text instances and context concepts in surrounding environments, which results in better image captioning and visual question answering performance. Applications include scene understanding and active agent exploration.

[Scene Text Detection and Recognition in Natural Images, 09/2013-05/2018]
Designed new deep learning based inference algorithms for scene text detection, retrieval, and recognition in the wild, in the presence of image degradations like blur, distortion, noise, cluttered background, etc.

[Intelligent Navigation Aid for Visually Impaired Persons, 09/2014-05/2016]
Developed mobile applications to remove the degradations in captured indoor videos, then perform real-time indoor navigation and scene text/sign extraction for the visually impaired people. Demo presented with Google Tango device at US Department of Transportation (DOT) in *March 2016*.

SELECTED PUBLICATIONS

Xuejian Rong, Chucai Yi, and Yingli Tian. *Unambiguous Text Localization, Retrieval, and Recognition for Cluttered Scenes.* IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**). (*Under Review*)

Benjamin Planche, **Xuejian Rong**, Ziyan Wu, Srikrishna Karanam, Harald Kosch, YingLi Tian et al. *Incremental Scene Synthesis.* Thirty-third Conference on Neural Information Processing Systems (**NeurIPS**), 2019.

Haiyan Wang, **Xuejian Rong**, Liang Yang, and Yingli Tian. *Towards Weakly Supervised Semantic Segmentation in 3D Graph-Structured Point Clouds of Wild Scenes.* British Machine Vision Conference (**BMVC**), 2019. (*Oral Presentation*)

Xuejian Rong, Chucai Yi, and Yingli Tian. *Unambiguously Indicated Characterces for Referring Scene Text Segmentation.* IEEE Transactions on Image Processing (**TIP**). (*Accepted*)

Xuejian Rong, Chucai Yi, and Yingli Tian. *Unambiguous Text Localization and Retrieval for Cluttered Scenes.* IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2017. (*Spotlight Oral Presentation*)

Yang Xian, **Xuejian Rong**, Xiaodong Yang, and Yingli Tian. *Evaluation of Low-Level Features for Real-World Surveillance Event Detection.* IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), 2017.

Xuejian Rong, Bing Li, Aris Arditi, and Yingli Tian. *Guided Text Spotting for Assistive Blind Navigation in Unfamiliar Environments.* International Symposium on Visual Computing (**ISVC**), 2016. (*Oral Presentation*)

Xuejian Rong and Yingli Tian. *Adaptive Shrinkage Cascades for Blind Image Deconvolution.* IEEE International Conference on Digital Signal Processing (**DSP**), 2016. (*Oral Presentation*)

Yuancheng Ye, **Xuejian Rong**, Xiaodong Yang, and Yingli Tian. *Region Trajectories for Video Semantic Concept Detection.* ACM International Conference on Multimedia Retrieval (**ICMR**), 2016.

J. Pablo Munoz, Bing Li, **Xuejian Rong**, Jizhong Xiao, Yingli Tian, Aris Arditi. *Demo: Assisting Visually Impaired People Navigate Indoors.* The 25th International Joint Conference on Artificial Intelligence (**IJCAI**), 2016.

Xuejian Rong, Chucai Yi, Xiaodong Yang, and Yingli Tian. *Scene Text Recognition in Multiple Frames based on Text Tracking.* IEEE International Conference on Multimedia and Expo (**ICME**), 2014.

TALKS AND ACADEMIC HONORS

2017	IEEE CVPR, Spotlight Presentation on Scene Text Extraction
2016	IEEE ICME, Doctoral Consortium Travel Award
2015	First Place on TRECVID Semantic Localization Competition
2013-2018	Graduate Research Fellowship, CUNY
2009-2011	Scholarship for Academic Excellence, NUAA

SKILLS

Programming Languages	C, C++, Python, Matlab, and Shell with practical experiences
Tools	OpenCV, PyTorch, TensorFlow, Caffe, LaTeX, GNU Linux

PROFESSIONAL ACTIVITIES

Reviewer	CVPR, ICCV, AAAI, BMVC, ICIP, ICME, TMM, TIP, MVA, JVCI