XUEJIAN RONG

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EDUCATION

09/2013-present The City College, City University of New York (CUNY), USA

Ph.D. Candidate in Electrical Engineering Expected April 2019

Research Focus: Computer Vision & Machine Learning, specifically on Scene Understanding

Committee: Yingli Tian (chair), Ioannis Stamos, Jizhong Xiao, Zhigang Zhu

Thesis Proposal: Deep Features for Context-aware Text Extraction [slides]

09/2009-06/2013 Nanjing University of Aeronautics and Astronautics (NUAA), China

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

EXPERIENCES

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 agent exploration and few-shot learning.

09/2013-05/2018 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. The proposed framework connects the Natural Language Processing and Computer Vision research areas.

[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. Recognized texts in indoor environments usually carry important contextual information which could significantly assist the independent travel of blind or visually impaired persons.

[Intelligent Navigation Aid for Visually Impaired Persons, 09/2014-03/2016]

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*.

09/2017-10/2017 Adjunct Lecturer, ChinaHadoop. *Beijing, China*

Deep Learning in Computer Vision, 900+ students, online course on the leading education platform in China.

SELECTED PUBLICATIONS

Xuejian Rong, Ziyan Wu, Srikrishna Karanam, Yingli Tian. *Conference Paper on 3D Visual Feature Encoding for Novel View Synthesis*. (*In Preparation*).

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, Andreas Hutter, Jan Ernst. *Incremental Scene Synthesis* . arXiv preprint arXiv:1811.12297, 2018.

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

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.

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
2013	Outstanding Thesis Award, 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, BMVC, ICIP, ICME, TMM, TIP, MVA, JVCI

REFERENCES

Yingli Tian	Professor, IEEE Fellow, CUNY. `ytian@ccny.cuny.edu`
Xiaodong Yang	Senior Research Scientist, NVIDIA Research. `xiaodongy@nvidia.com`
Chucai Yi	Research Engineer, Google. `chucaiyi@google.com`