

Wei Xiong

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Biography

I am a fifth-year PhD student in Department of Computer Science, at the University of Rochester, advised by Prof. Jiebo Luo. My research primarily focuses on visual synthesis and manipulation with generative models.

Education

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| 2017 – 2022 | Ph.D., Computer Science, University of Rochester
Advisor: Prof. Jiebo Luo
Research Topic: <i>Visual Synthesis and Manipulation</i> |
| 2014 – 2017 | M.Sc., Computer Science, Wuhan University
Research Topic: <i>Scene Understanding Using Deep Networks</i> |
| 2010 – 2014 | B.Sc., Computer Science, Wuhan University
Research Topic: <i>Unsupervised Feature Learning</i> |

Publications

Conference Proceedings

- 1 H. Zheng, H. Liao, L. Chen, **W. Xiong**, T. Chen and J. Luo, “Example-Guided Image Synthesis across Arbitrary Scenes using Masked Spatial-Channel Attention and Self-Supervision”, European Conference on Computer Vision (ECCV), 2020.
- 2 T. Chen, **W. Xiong**, H. Zheng, and J. Luo, “Image Sentiment Transfer”, ACM Multimedia (MM), 2020.
- 3 **W. Xiong**, et al., “Unsupervised Low-light Image Enhancement with Decoupled Generative Networks”, 2020.
- 4 **W. Xiong**, Y. He, Y. Zhang, W. Luo, L. Ma and J. Luo, “Fine-grained Image-to-Image Transformation towards Visual Recognition”, IEEE/CVF Conferences on Computer Vision and Pattern Recognition (CVPR), Seattle, WA, June 2020.
- 5 **W. Xiong**, J. Yu, Z. Lin, J. Yang, X. Lu, C. Barnes and J. Luo, “Foreground-aware Image Inpainting”, In Proceedings of Computer Vision and Pattern Recognition (CVPR), 2019, pp. 5840-5848.
- 6 **W. Xiong**, W. Luo, L. Ma, W. Liu, and J. Luo, “Learning to Generate Time-lapse Videos Using Multi-stage Dynamic Generative Adversarial Networks”, In Proceedings of Computer Vision and Pattern Recognition (CVPR), 2018, pp. 2364-2373.
- 7 F. Mao, **W. Xiong**, B. Du, and L. Zhang, “Stochastic decorrelation constraint regularized auto-encoder for visual recognition”, International Conference on Multimedia Modeling (MMM), 2017, pp. 368–380.
- 8 **W. Xiong**, B. Du, L. Zhang, R. Hu, and D. Tao, “Regularizing Deep Convolutional Neural Networks with a Structured Decorrelation Constraint”, IEEE International Conference on Data Mining (ICDM), 2016, pp. 519–528.

Publications (continued)

- 9 W. Xiong, B. Du, L. Zhang, L. Zhang, and D. Tao, “Denoising Auto-Encoders toward Robust Unsupervised Feature Representation”, International Joint Conference on Neural Networks (IJCNN), 2016, pp. 4721–4728.
- 10 W. Xiong, B. Du, L. Zhang, R. Hu, W. Bian, J. Shen, and D. Tao, “R²FP: Rich and Robust Feature Pooling for Mining Visual Data”, IEEE International Conference on Data Mining (ICDM), 2015, pp. 469–478.

Journal Articles

- 1 W. Xiong*, W. Li*, H. Liao, J. Huo, Y. Gao, and J. Luo, “CariGAN: Caricature Generation through Weakly Paired Adversarial Learning”, **Neural Networks**, 2020. (Equal Contribution)
- 2 B. Du, W. Xiong, J. Wu, L. Zhang, L. Zhang, and D. Tao, “Stacked Convolutional Denoising Auto-Encoders for Feature Representation”, **IEEE Transactions on Cybernetics**, vol. 47, no. 4, pp. 1017–1027, 2017.
- 3 W. Xiong, L. Zhang, B. Du, and D. Tao, “Combining Local and Global: Rich and Robust Feature Pooling for Visual Recognition”, **Pattern Recognition**, vol. 62, pp. 225–235, 2017. doi: 10.1016/j.patcog.2016.08.006.

Experience

Research Intern

- 2021.05 **Google Research**, Mountain View, USA.
- 2021.08 Supervisors: Orly Liba and Kfir Aberman.
Topic: Example-guided large hole image completion. In this project, we design modern generative models that are guided by examples to complete images with very large missing regions.

Research Intern

- 2020.05 **Google Cloud AI**, Sunnyvale, USA.
- 2020.08 Supervisors: Mingyang Ling, Han Zhang and Zizhao Zhang.
Topic: GANs as data augmentation. In this project, we design a framework to adopt GANs as an effective differentiable data augmentation method that can boost the performance of downstream tasks.

Research Intern

- 2019.05 **ByteDance AI Lab**, Palo Alto, USA.
- 2019.08 Supervisors: Ding Liu, Chen Fang and Xiaohui Shen.
Topic: Real-world low-light image enhancement. In this project, we tackle the problem of enhancing real-world low-light images containing heavy noise. We develop supervised and unsupervised methods for both contrast enhancement and real-world image denoising.

Experience (continued)

Research Intern

- 2018.05 **Adobe Research**, San Jose, USA.
- 2018.08 Supervisors: Zhe Lin, Jimei Yang, Xin Lu and Connelly Barnes.
Topic: Foreground-aware image inpainting. In this project, we disentangle the image inpainting problem into foreground contour completion and contour-guided image completion, to synthesize contents with more reasonable structures.

Research Intern

- 2017.06 **Tencent AI Lab**, Shenzhen, China.
- 2017.08 Supervisors: Wenhan Luo, Lin Ma and Wei Liu.
Topic: Time-lapse video prediction. In this project, we predict the future time-lapse frames given only one starting frame. We propose a two-stage GAN model to first generate content details then refine the motion dynamics of the generated video.

Research Assistant

- 2015.06 **Laboratoire d'Informatique Gaspard-Monge (LIGM)**, Paris, France.
- 2015.09 Supervisor: Chaohui Wang
Topic: Weakly supervised image segmentation.

Academic Service

I am a Reviewer of conferences including CVPR, ECCV, NeurIPS, IJCAI, AAAI, WACV and journals including IEEE Transactions on Image Processing (TIP), IEEE Transactions on Multimedia (TMM), IEEE Transactions on Neural Networks and Learning Systems (TNNLS), IEEE Signal Processing Letters (SPL) , IET Image Processing and Journal of Selected Topics in Signal Processing.