

Yu Zeng Ph.D student. Johns Hopkins University

✉ yzeng22@jhu.edu

🏠 <https://zengyu.me>

🎓 [Google Scholar](#)

🐙 [GitHub](#)

Research Interest

My research interest lies in computer vision and deep learning. I have focused on two main areas: (1) deep generative models for image synthesis and editing, and (2) label-efficient deep learning. By combining these research areas, I aim to bridge human creativity and machine intelligence through user-friendly and socially responsible models while minimizing the need for intensive human supervision.

Education

Johns Hopkins University

Expected 2024 Ph.D. in Electrical and Computer Engineering.
• Advisor: Dr. Vishal M. Patel

Dalian University of Technology

2020 M.S. in Information Engineering.
• Advisor: Dr. Huchuan Lu

B.S. in Electronic and Information Engineering.

Employment History

2023 – 2023 **Research Intern**, NVIDIA Research.
2022 – 2023 **Research Scientist Intern**, Adobe Research.
2020 – 2021 **Researcher**, Tencent Interactive Entertainment Group.
2019 – 2019 **Research Scientist Intern**, Adobe Research.

Research Publications

Under Review/Preprints

- 1 **Y. Zeng**, M. Zhou, Y. Xue, and V. M. Patel, “Securing deep generative models with universal adversarial signature,” *arXiv preprint arXiv:2305.16310*, 2023.
- 2 **Y. Zeng**, Z. Lin, and V. M. Patel, “Shape-guided object inpainting,” *arXiv preprint arXiv:2204.07845*. *Under Review.*, Jul. 2022.
- 3 **Y. Zeng**, H. Lu, and A. Borji, “Statistics of deep generated images,” *arXiv preprint arXiv:1708.02688*, 2017.

Published

- 1 **Y. Zeng**, Z. Lin, J. Zhang, *et al.*, “Scenecomposer: Any-level semantic image synthesis,” in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, Jun. 2023 (Highlight, top 2.5%).
- 2 J. Shang, **Y. Zeng**, X. Qiao, *et al.*, “Jr2net: Joint monocular 3d face reconstruction and reenactment,” in *Proceedings of the AAAI Conference on Artificial Intelligence*, 2023 (Oral presentation).
- 3 H. Zhao, **Y. Zeng**, H. Lu, and L. Wang, “Large occluded human image completion via image-prior cooperating,” in *Proceedings of the AAAI Conference on Artificial Intelligence*, 2024.
- 4 **Y. Zeng**, V. M. Patel, H. Wang, *et al.*, “Jedi: Joint-image diffusion models for finetuning-free personalized text-to-image generation,” in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, 2024.

- 5 Y. Mei, **Y. Zeng**, H. Zhang, *et al.*, “Holo-relighting: Controllable volumetric portrait relighting from a single image,” in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, 2024.
- 6 **Y. Zeng**, Z. Lin, and V. M. Patel, “Sketchedit: Mask-free local image manipulation with partial sketches,” in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, 2022, pp. 5951–5961.
- 7 S. Cai, **Y. Zeng**, S. Yang, X. Jia, H. Lu, and Y. He, “Deformable dynamic sampling and dynamic predictable mask mining for image inpainting,” *IEEE Transactions on Neural Networks and Learning Systems*, 2022.
- 8 H. Zhang, **Y. Zeng**, H. Lu, L. Zhang, J. Li, and J. Qi, “Learning to detect salient object with multi-source weak supervision,” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2021.
- 9 **Y. Zeng**, Z. Lin, H. Lu, and V. M. Patel, “Cr-fill: Generative image inpainting with auxiliary contextual reconstruction,” in *Proceedings of the IEEE/CVF International Conference on Computer Vision*, 2021, pp. 14 164–14 173.
- 10 **Y. Zeng**, Z. Lin, J. Yang, J. Zhang, E. Shechtman, and H. Lu, “High-resolution image inpainting with iterative confidence feedback and guided upsampling,” in *European conference on computer vision*, Springer, Cham, 2020, pp. 1–17.
- 11 E. Ntavelis, A. Romero, S. Bigdeli, *et al.*, “Aim 2020 challenge on image extreme inpainting,” in *European Conference on Computer Vision*, Springer, Cham, 2020, pp. 716–741.
- 12 Y. Zhuge, **Y. Zeng**, and H. Lu, “Deep embedding features for salient object detection,” in *Proceedings of the AAAI Conference on Artificial Intelligence*, vol. 33, 2019, pp. 9340–9347.
- 13 **Y. Zeng**, Y. Zhuge, H. Lu, L. Zhang, M. Qian, and Y. Yu, “Multi-source weak supervision for saliency detection,” in *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition*, 2019, pp. 6074–6083.
- 14 **Y. Zeng**, Y. Zhuge, H. Lu, and L. Zhang, “Joint learning of saliency detection and weakly supervised semantic segmentation,” in *Proceedings of the IEEE/CVF international conference on computer vision*, 2019, pp. 7223–7233.
- 15 **Y. Zeng**, H. Lu, L. Zhang, M. Feng, and A. Borji, “Learning to promote saliency detectors,” in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, 2018, pp. 1644–1653.
- 16 **Y. Zeng**, M. Feng, H. Lu, G. Yang, and A. Borji, “An unsupervised game-theoretic approach to saliency detection,” *IEEE Transactions on Image Processing*, vol. 27, no. 9, pp. 4545–4554, 2018.

Patents

- 1 **Y. Zeng**, Y. Balaji, T. Wang, X. Huang, and M.-Y. Liu, “Neural networks to generate objects within different images,” US Patent App. 18/518,430, 2023.
- 2 **Y. Zeng**, Z. Lin, J. Zhang, Q. Liu, J. W. Y. Kuen, and J. Collomosse, “Multi-modal image generation,” US Patent App. 18/057,857, Nov. 2022.
- 3 Z. Lin, **Y. Zeng**, J. Yang, J. Zhang, and E. Shechtman, “Iterative image inpainting with confidence feedback,” US Patent 11,398,015, Jul. 2022.
- 4 Z. Lin, **Y. Zeng**, J. Yang, J. Zhang, and E. Shechtman, “Guided up-sampling for image inpainting,” US Patent App. 16/864,388, Nov. 2021.
- 5 H. Lu, **Y. Zeng**, H. Zhang, J. Li, and L. Zhang, “Method for detection image salient object,” CN110956185B, 2019.
- 6 Y. Wang, H. Ma, J. Ma, R. Yang, and **Y. Zeng**, “Coin separator,” CN206097264U, 2016.

Teaching

Johns Hopkins University

Spring 2023 Deep Learning (EN.520.438), Guest Lecturer

Spring 2024 Machine Learning Meets Networks (EN.520.698), Course Assistant

Grant Proposals Involved

DOI & IARPA: Walk-through Rendering from Images of Varying Altitudes (WRIVA)

Invited Talks & Presentations

Learning to synthesize images with multimodal and hierarchical inputs King Abdullah University of Science and Technology. Feb. 2024

Learning to synthesize images with multimodal and hierarchical inputs Hongkong University of Science and Technology (Guangzhou). Jan. 2024

Deep generative models for image synthesis and editing Nanjing University. Dec. 2023

Deep generative models for image synthesis and editing Chinese University of Hongkong (Shenzhen). Nov. 2023

SceneComposer: Any-level Semantic Image Synthesis. TikTok. Jul. 2023

Joint Monocular 3d Face Reconstruction and Reenactment. AAAI. Feb. 2023

Deep Learning for Dense Prediction Problems in Computer Vision. Adobe. Oct. 2019

Skills

Coding Python, C, C++, Matlab

Web Dev HTML, CSS, JavaScript

Misc. Research on computer vision, image processing, machine learning, artificial intelligence

Awards and Achievements

2024 KAUST Rising Stars in AI

2023 DAAD AInet fellowship

2021 Johns Hopkins University ECE Kewei Yang and Grace Xin Fellowship

2020 Third place of AIM 2020 challenge on image extreme inpainting (ECCV 2020 Workshop)

2018 Third place of 2018 OPPO Top AI Competition on Portrait Segmentation (3rd from 456 teams)

2017 China National Scholarship

2016 Second Place of China National College Mechanical Design Contest

Services

Invited Reviewer for

2022,2023,2024 International Conference on Learning Representations (ICLR)

2020, 2021, 2022, 2023,2024 The IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR)

2022 The Conference on Neural Information Processing Systems (Neurips)

2019,2021 The International Conference on Computer Vision (ICCV)

Services (continued)

2020,2022,2024	The European Conference on Computer Vision (ECCV)
2020,2021,2023	The AAAI Conference on Artificial Intelligence (AAAI)
2022	The ACM SIGGRAPH Asia Conference
	IEEE Transactions on Cybernetics
	IEEE Transactions on Image Processing
	IEEE Transactions on Pattern Analysis and Machine Intelligence
	Pattern Recognition
	International Journal of Computer Vision
	IEEE Transactions on Neural Networks and Learning Systems