Yuheng Li

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Research Interests

I am broadly interested in understanding and building AI, with a focus on how different modalities contribute to intelligence. I am particularly curious about the possibilities and limits of AI and its relationship to human cognition.

Education

University of Wisconsin–Madison — Madison, WI
Ph.D. in Computer Science — *2020 – 2024*
- Advisor: **Yong Jae Lee**
- Thesis: *Controllable Image Generative Models*

University of California–Davis — Davis, CA
M.S. in Computer Science — *2018 – 2020*
- Advisor: **Yong Jae Lee**
- Thesis: *"Multifactor Disentanglement And Encoding For Conditional Image Generation"*

Huazhong University of Science and Technology — Wuhan, China
B.S. in Electrical and Electronic Engineering — *2014 – 2018*
- Advisors: **Bo Rao, Yong Yang**

Employment

Research Scientist — April 2024 – Present
Adobe Research at San Jose

Graduate Research Assistant — September 2020 – April 2024
University of Wisconsin–Madison, Department of Computer Science

Graduate Research Assistant — September 2018 – June 2020
University of California–Davis, Department of Computer Science

Research Intern — June 2023 – September 2023
Adobe Research at San Jose

Research Intern — September 2022 – December 2022
Microsoft Research at Redmond

Research Intern — June 2021 – September 2021
Adobe Research at San Jose

Research Intern — June 2020 – September 2020
Adobe Research at San Jose

Publications and Preprints

Chun-Hsiao Yeh, Yilin Wang, Nanxuan Zhao, Richard Zhang, **Yuheng Li**, Yi Ma, Krishna Kumar Singh.
"Beyond Simple Edits: X-Planner for Complex Instruction-Based Image Editing."
arXiv preprint, 2025.

Thao Nguyen, Krishna Kumar Singh, Jing Shi, Trung Bui, Yong Jae Lee, **Yuheng Li**.
"Yo'Chameleon: Personalized Vision and Language Generation."
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2025.

Sicheng Mo, Thao Nguyen, Xun Huang, Siddharth Srinivasan Iyer, Yijun Li, Yuchen Liu, Abhishek Tandon, Eli Shechtman, Krishna Kumar Singh, Yong Jae Lee, Bolei Zhou, **Yuheng Li**.
"X-Fusion: Introducing New Modality to Frozen Large Language Models."

IEEE International Conference on Computer Vision (ICCV), 2025.
Best Paper at CVPR 2025 Workshop: Transformers for Vision (T4V)

Mu Cai, Zeyi Huang, **Yuheng Li**, Haohan Wang, Yong Jae Lee.
"Leveraging Large Language Models for Scalable Vector Graphics-Driven Image Understanding."
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2025.

Bhishma Dedhia, David Bourgin, Krishna Kumar Singh, **Yuheng Li**, Yan Kang, Zhan Xu, Niraj K. Jha, Yuchen Liu.
"Generating, Fast and Slow: Scalable Parallel Video Generation with Video Interface Networks."
IEEE International Conference on Computer Vision (ICCV), 2025.

Thao Nguyen, Haotian Liu, **Yuheng Li**, Mu Cai, Utkarsh Ojha, Yong Jae Lee.
"Yo'LLaVA: Your Personalized Language and Vision Assistant."
Neural Information Processing Systems (NeurIPS), 2024.

Haotian Liu, Chunyuan Li, **Yuheng Li**, Yong Jae Lee.
"Improved Baselines with Visual Instruction Tuning."
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024.

Thao Nguyen, Utkarsh Ojha, **Yuheng Li**, Haotian Liu, Yong Jae Lee.
"Edit One for All: Interactive Batch Image Editing."
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024.

Yuheng Li, Haotian Liu, Yangming Wen, Yong Jae Lee.
"Generate Anything Anywhere in Any Scene."
arXiv preprint, 2023.

Thao Nguyen, **Yuheng Li**, Utkarsh Ojha, Yong Jae Lee.
"Visual Instruction Inversion: Image Editing via Visual Prompting."
Thirty-seventh Conference on Neural Information Processing Systems (NeurIPS), 2023.

Yuheng Li, Haotian Liu, Qingyang Wu, Fangzhou Mu, Jianwei Yang, Jianfeng Gao, Chunyuan Li, Yong Jae Lee.
"GLIGEN: Open-Set Grounded Text-to-Image Generation."
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023.

Utkarsh Ojha*, **Yuheng Li***, Yong Jae Lee.
"Towards Universal Fake Image Detectors that Generalize Across Generative Models."
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023.

Utkarsh Ojha*, **Yuheng Li***, Yong Jae Lee.
"What Knowledge Gets Distilled in Knowledge Distillation?"
Thirty-seventh Conference on Neural Information Processing Systems (NeurIPS), 2023.

Xueyan Zou, Fanyi Xiao, Zhiding Yu, **Yuheng Li**, Yong Jae Lee.
"Delving Deeper into Anti-aliasing in ConvNets."
International Journal of Computer Vision (IJCV), 2022.

Yuheng Li, Yijun Li, Jingwan Lu, Eli Shechtman, Yong Jae Lee, Krishna Kumar Singh.
"Contrastive Learning for Diverse Disentangled Foreground Generation."
Proceedings of the European Conference on Computer Vision (ECCV), 2022.

Yang Xue, **Yuheng Li**, Krishna Kumar Singh, Yong Jae Lee.
"GIRAFFE HD: A High-Resolution 3D-aware Generative Model."
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2022.

Yuheng Li, Yijun Li, Jingwan Lu, Eli Shechtman, Yong Jae Lee, Krishna Kumar Singh.
"Collaging Class-specific GANs for Semantic Image Synthesis."
IEEE International Conference on Computer Vision (ICCV), 2021.

Yuheng Li, Krishna Kumar Singh, Yong Jae Lee.
"PartGAN: Unsupervised Part Decomposition for Image Generation and Segmentation."
British Machine Vision Conference (BMVC), 2021.

Yuheng Li, Krishna Kumar Singh, Utkarsh Ojha, Yong Jae Lee.
"MixNMatch: Multifactor Disentanglement and Encoding for Conditional Image Generation."
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2020.

Farzad Fereidouni, Austin Todd, **Yuheng Li**, Che-Wei Chang, Keith Luong, Avi Rosenberg, Yong-Jae Lee, James W Chan, Alexander Borowsky, Karen Matsukuma, Kuang-Yu Jen, Richard Levenson.

"Dual-mode emission and transmission microscopy for virtual histochemistry using hematoxylin-and eosin-stained tissue sections."
Biomedical Optics Express, 2019.

Zelong Liao, **Yuheng Li**, Xiangsheng Xiao, Chen Wang, Shang Cao, Yong Yang.
"Electrostatic precipitation of submicron particles with an enhanced unipolar pre-charger."
Aerosol and Air Quality Research, 2018.

Professional Activities

Reviewer

IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022, 2023, 2024
IEEE International Conference on Computer Vision (ICCV) 2023
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2023
European Conference on Computer Vision (ECCV) 2024
Asian Conference on Computer Vision (ACCV) 2024
Conference on Neural Information Processing Systems (NeurIPS) 2022, 2023, 2025
International Conference on Machine Learning (ICML) 2023
International Conference on Learning Representations (ICLR) 2024
Conference on Empirical Methods in Natural Language Processing (EMNLP) 2023
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2022
AI for Content Creation Workshop at CVPR 2022

Invited Talks

2025 : University of California San Diego (UCSD)
2025 : The 4th Workshop on Transformers for Vision (T4V) at CVPR 2025
2023 : Guest Lecture at University of Wisconsin-Madison
2023 : Invited speaker Zhidx platform

Teaching Assistant

Spring 2020: ECS 174 Computer Vision at UC Davis
Fall 2019: ECS 269 Visual Recognition at UC Davis

Student Advising

Sicheng Mo: PhD student at UCLA (2024 – Present)
Thao Nguyen: PhD student at University of Wisconsin-Madison (2022 – Present)
Xue Yang: Master's student at UC Davis (2020 – 2022)

Patents

P11153-US: "Diverse Image Inpainting Using Contrastive Learning"

P10595-US: "Generating Synthesized Digital Images Utilizing a Multi-Resolution Generator Neural Network"

P10591-US: "Generating Synthesized Digital Images Utilizing Class-Specific Machine-Learning Models"

Skills

Programming Languages: Python, C/C++, MATLAB, JavaScript
Machine Learning Frameworks: PyTorch, TensorFlow, Hugging Face, OpenCV
Systems & Tools: Linux, Git, Docker, CUDA, LaTeX