Aleksander Holynski
Curriculum Vitae

Updated November 2023
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Education & Experience

University of California, Berkeley **2022-**
Postdoctoral Scholar w/ Alexei A. Efros, Angjoo Kanazawa

Google Research, Seattle, WA **2022-**
Research Scientist

University of Washington 2014 - 2022
Ph.D. in Computer Science and Engineering
Advisors: Steve Seitz, Richard Szeliski, Brian Curless,
Thesis: "Augmenting Visual Memories"

Tooploox AI, Warsaw, PL 2018 - 2022
Research Advisory Board

Facebook, Seattle, WA 2018
Research Intern w/ Richard Szeliski. See Publications [5].

Facebook, Seattle, WA 2017 - 2018
Visiting Researcher, Computational Photography Group

Facebook, Seattle, WA 2017
Research Intern w/ Johannes Kopf. See Publications [3].

Google, Seattle, WA 2016
Research Intern w/ Carlos Hernandez, Changchang Wu

University of Illinois at Urbana-Champaign 2011 - 2014
B.S. in Computer Science with High Honors
Advisors: Robin Kravets, Svetlana Lazebnik

Qualcomm Research & Development, San Diego, CA 2014
Research Intern, Image Processing Algorithms

Qualcomm Innovation Center, San Diego, CA 2013
Intern, Digital Signal Processing

Qualcomm Inc., San Diego, CA 2012
Intern, Camera Sensor Drivers & Algorithms

Publications

[27] J. Ma, E. Lu, S. Zada, **A. Holynski**, T. Dekel, B. Curless, M. Rubinstein, F. Cole, "VidPanos: Synthesizing Video Panoramas from Panning Videos" *in submission*, 2023

[26] R. Wu*, B. Mildenhall*, P. Henzler, R. Gao, K. Park, D. Watson, P.P. Srinivasan, D. Verbin, J.T. Barron, B. Poole, **A. Holynski***, "ReconFusion: 3D Reconstruction with Diffusion Priors" *in submission*, 2023

[25] G. Luo, T. Darrell, O. Wang, DB Goldman, **A. Holynski**, "Readout Guidance: Learning Control from Diffusion Features" *in submission*, 2023

[24] I. Siglidis, S. Ginosar, **A. Holynski**, A.A. Efros, M. Aubry, "Diffusion Models as Tools for Data Mining of Geographical Visual Elements" *in submission*, 2023

[23] S. Jain, D. Watson, **A. Holynski**, E. Tabellion, B. Poole, J. Kontkanen, "Video Interpolation with Diffusion Models" *in submission*, 2023

[22] C. Feng, Z. Chen, **A. Holynski**, A.A. Efros, A. Owens, "GPS-to-3D: Lifting Tourist Photos to 3D Using 2D Diffusion" *in submission*, 2023

[21] E. Weber, **A. Holynski**, V. Jampani, S. Saxena, N. Snavely, A. Kar, A. Kanazawa, "NeRFiller: Completing Scenes via Generative 3D Inpainting" *in submission*, 2023

[20] X. Wang, J. Kontkanen, B. Curless, S. Seitz, I. Kemelmacher, B. Mildenhall, P.P. Srinivasan, D. Verbin, **A. Holynski**, "Generative Powers of Ten" *in submission*, 2023

[19] M.L. Shih, W.C. Ma, L. Boyice, **A. Holynski**, F. Cole, B. Curless, J. Kontkanen, "ExtraNeRF: Visibility-Aware View Extrapolation of Neural Radiance Fields with Diffusion Models" *in submission*, 2023

[18] Y. Wang, **A. Holynski**, B. Curless, S. Seitz, "Infinite Texture: Text-guided High Resolution Diffusion Texture Synthesis" *in submission*, 2023

[17] R. Po, W. Yifan, V. Golyanik, K. Aberman, J. T. Barron, A. Bermano, E. Chan, T. Dekel, **A. Holynski**, A. Kanazawa, C. K. Liu, L. Liu, B. Mildenhall, M. Niessner, B. Ommer, C. Theobalt, P. Wonka, G. Wetzstein, "State of the Art on Diffusion Models for Visual Computing" in *arXiv*, 2023

[16] L. Tang, N. Ruiz, Q. Chu, Y. Li, **A. Holynski**, D.E. Jacobs, B. Hariharan, Y. Pritch, N. Wadhwa, K. Aberman, M. Rubinstein, "RealFill: Reference-Driven Generation for Authentic Image Completion" in *arXiv*, 2023

[15] Z. Li, R. Tucker, N. Snavely, **A. Holynski**, "Generative Image Dynamics" in *arXiv*, 2023

[14] Q. Wang, Y. Chang, R. Cai, Z. Li, B. Hariharan, **A. Holynski**, N. Snavely, "Tracking Everything Everywhere All at Once" in *IEEE International Conference on Computer Vision (ICCV)*, 2023

[13] D. Epstein, A. Jabri, B. Poole, A.A. Efros, **A. Holynski**, "Diffusion Self-Guidance for Controllable Image Generation" in *Advances in neural information processing systems (NeurIPS)*, 2023

[12] G. Luo, L. Dunlap, S.D.H. Park, **A. Holynski**, T. Darrell, "Diffusion Hyperfeatures: Searching Through Time and Space for Semantic Correspondence" in *Advances in neural information processing systems (NeurIPS)*, 2023

[11] A. Haque, M. Tancik, A.A. Efros, **A. Holynski**, A. Kanazawa, "Instruct-NeRF2NeRF: Editing 3D Scenes with Instructions" in *IEEE International Conference on Computer Vision (ICCV)*, 2023

[10] F. Warburg*, E. Weber*, M. Tancik, **A. Holynski**, A. Kanazawa, "Nerfbusters: Removing Ghostly Artifacts from Casually Captured NeRFs" in *IEEE International Conference on Computer Vision (ICCV)*, 2023

[9] J. Karras, **A. Holynski**, T. Wang, I. Kemelmacher, "DreamPose: Fashion Image-to-Video Synthesis via Stable Diffusion" in *IEEE International Conference on Computer Vision (ICCV)*, 2023

[8] T. Brooks*, **A. Holynski***, A.A. Efros, "InstructPix2Pix: Learning to Follow Image Editing Instructions" in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023 (Highlight)

[7] Y. Wang, **A. Holynski**, X. Zhang, X. Zhang, "SunStage: Portrait Reconstruction and Relighting using the Sun as a Light Stage" in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023

[6] **A. Holynski**, B. Curless, S.M. Seitz, R. Szeliski, "Animating Pictures with Eulerian Motion Fields" in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021 (Oral)

[5] **A. Holynski**, D. Geraghty, J.M. Frahm, C. Sweeney, R. Szeliski, "Reducing Drift in Structure from Motion using Extended Features" in *International Conference on 3D Vision (3DV)*, 2020 (Oral)

[4] J.J. Park, **A. Holynski**, S.M. Seitz, "Seeing the World in a Bag of Chips" in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020 (Oral)

[3] **A. Holynski**, J. Kopf, "Fast Depth Densification for Occlusion-aware Augmented Reality" in *ACM Transactions on Graphics (SIGGRAPH Asia)*, 2018

[2] C. Sweeney, **A. Holynski**, B. Curless, S.M. Seitz, "Structure from Motion for Panorama-Style Videos" in *arXiv*, 2018

[1] A. Khosrowpour, I. Fedorov, **A. Holynski**, J.C. Niebles, M. Golparvar-Fard, "Automated Worker Activity Analysis in Indoor Environments for Direct Work Rate Improvement from long sequences of RGBD Images" in *Construction Research Congress (CRC)*, 2014

Awards & Honors

ICCV **Best Student Paper Award** 2023
for "Tracking Everything Everywhere All at Once"

ICCV Oral (top 1.8% of submissions) 2023
for "Tracking Everything Everywhere All at Once"

ICCV Oral (top 1.8% of submissions) 2023
for "Instruct-NeRF2NeRF: Editing 3D Scenes with Instructions"

CVPR Highlight (top 2.6% of submissions) 2023
for "InstructPix2Pix: Learning to Follow Image Editing Instructions"

CVPR Oral (top 4.1% of submissions) 2021
for "Animating Pictures with Eulerian Motion Fields"

3DV Oral (top 13% of submissions) 2020
for "Reducing Drift in Structure from Motion using Extended Features"

CVPR Oral (top 5.7% of submissions) 2020
for "Seeing the World in a Bag of Chips"

University of Washington Reality Lab Fellowship 2018 - 2022

Runner-up, Pacific Northwest ACM ICPC 2014

Leach/Winokur Endowed Fellowship in Computer Science & Engineering 2014 - 2015

Achievement Rewards for College Scientists (ARCS) Fellowship 2014 - 2016

University of Illinois Edmund J. James Scholar 2011 - 2014

University of Illinois College of Engineering Dean's List 2011 - 2014

Teaching

Guest Lecturer, CS 194-173 Learning for 3D Vision, UC Berkeley 2023

Guest Lecturer, CSE576 Computer Vision, University of Washington 2020

Teaching Assistant, CSE576 Computer Vision, University of Washington 2020

Teaching Assistant, CSE481V AR/VR Capstone, University of Washington 2019

Teaching Assistant, CS398 Computer Architecture, University of Illinois 2013 - 2014

Teaching Assistant, CS125 Intro. to Computer Science, University of Illinois 2012

Academic Service

Volunteer: ICCV'23 DEI Review Committee

Reviewer: SIGGRAPH, SIGGRAPH Asia, Transactions on Graphics (TOG), Transactions on Visualization and Computer Graphics (TVCG), IEEE Conference on Computer Vision and Pattern Recognition (CVPR), European Conference on Computer Vision (ECCV), International Conference on 3D Vision (3DV)

Student Collaborators & Interns

Qianqian Wang, Research Intern @ Google Research. See Publications [14]. 2022

Yifan Wang @ University of Washington. See Publications [7]. 2022

Johanna Karras @ University of Washington. See Publications [9]. 2022

Jingwei Ma @ University of Washington, Google Research. See Publications [27]. 2022

Dave Epstein, Research Intern @ Google Research. See Publications [13]. 2023

Grace Luo, Research Intern @ Google Research. See Publications [25]. 2023

Xiaojuan Wang, Research Intern @ Google Research. See Publications [20]. 2023

Rundi Wu, Research Intern @ Google Research. See Publications [26]. 2023

Luming Tang, Research Intern @ Google Research. See Publications [16]. 2023

Etc

Languages: English (fluent, technical), Spanish (fluent, technical), Farsi (fluent), French (conversational), Polish (conversational)

Programming: C/C++, Python, OpenGL, PyTorch, Jax

Misc Projects: Holoscanner: Gamified 3D Scanning (link)

Invited Talks

"Generative Models for Visual Creation"
Warsaw Institute of Technology, Poland, October 2023

"Diffusion Priors for Creation and Editing"
Bay Area Computer Vision Day, Stanford, September 2023

"2D Generative Priors for 3D"
Summit for Understanding the Real World, August 2023

"Language-grounded Visual Manipulation"
CVPR 2023 6th Multimodal Learning and Applications Workshop, June 2023

"Tracking Everything Everywhere All At Once"
Google Computer Vision Talk Series, May 2023

"InstructPix2Pix: Learning to Follow Image Editing Instructions"
VISTEC Graduate Institute, Thailand, March 2023
Google Vision-Language Seminar, February 2023

"Augmenting Visual Memories"
NVIDIA, November 2021
MIT, October 2021
Adobe Research, October 2021
Apple, October 2021
Facebook, October 2021
Google Research, September 2021
UC Berkeley, August 2021