Aleksander Holynski
Curriculum Vitae

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

[21] 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

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

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

[18] 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

[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, <u>**Oral**</u>, **Best Student Paper Award**,

[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, <u>**Oral**</u>

[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, <u>**Highlight**</u>

[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, <u>**Oral**</u>

[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, <u>**Oral**</u>

[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, <u>**Oral**</u>

[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

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)

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.   2022

Meng-Li Shih, Research Intern @ Google Research.   2022

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

Grace Luo, Research Intern @ Google Research. See Publications [20].   2023

Xiaojuan Wang, Research Intern @ Google Research. See Publications [18].   2023

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

Rundi Wu, Research Intern @ Google Research. See Publications [21].   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 As Creative Tools: What's Next?"
  NeurIPS 2023 Workshop on Machine Learning for Creativity and Design, December 2023

"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