Simon Niklaus · Computer Vision and Deep Learning
sniklaus.com · mail@sniklaus.com · March, 2025

Professional Services

Area Chair | ICCV 2025, CVPR 2025, ECCV 2024

Selected Technology

10.2024 Prototype
Clean Machine - sniklaus.com/cleanmachine
Imagine being the videographer at a wedding, and the photographer is extensively using their flash. This will lead to overexposed frames in the video which severely degrades the captured footage, but Clean Machine is here to help.

10.2024 Lightroom
Image Denoising - sniklaus.com/imdenoise
We have recently introduced a new denosier in Lightroom that was pioneered by Michael Gharbi before he left Adobe to found a startup. Since then, Zhihao Xia and I have been the research leads behind this technology.

10.2024 Illustrator
3D Mockup - sniklaus.com/mockup
A common task for creative professionals is to mockup a design onto an object. This can challenging though, imagine putting a logo onto a t-shirt. Fortunately, we can analyze the 3D structure of the target image and automate this process.

10.2024 Lightroom
Sky Segmentation - sniklaus.com/skyseg
Sky segmentation is a core feature in many creative tools, for example to adjust the saturation of the sky separately from the rest. Shipping a sky segmentor across multiple platforms, from mobile to the desktop, is pretty tricky though.

09.2024 Firefly
Firefly Video - sniklaus.com/firevideo
After being one of the founders and key figures behind Adobe Firefly, I have been busy working on a foundational video model in a team led by Jianming Zhang. Like before, I have been in charge of the image data pipeline.

05.2024 Lightroom
Lens Blur - sniklaus.com/lensblur
Bokeh is an artistic tool that allows photographers to guide attention. This typically requires large and often expensive lenses, but we can also just synthesize this effect on imagery with a shallow depth of field by simulating the underlying physics.

04.2024 Firefly
Structure Reference - sniklaus.com/strucref
One key ingredient for text-to-image applications is controllability, and we have recently announced Structure Reference as a form of user control. It conditions the text-to-image synthesis guided by the estimated depth of a reference image.

03.2023 Firefly
Adobe Firefly - sniklaus.com/firefly
Together with Oliver Wang, Tobias Hinz, Cynthia Liu, and Kevin Matzen, I was one of the founding members of a project that later became known as Adobe Firefly. Specifically, I was in charge of anything data from data curation to data loading.

10.2021 Prototype
Project Inbetween - sniklaus.com/inbetween
Being able to take pictures at a whim has left me with collections where many photos look alike. Given similar images, could we animate a transition between them to help us cherish past moments? This is what Project Inbetween is about.

Written Publications

06.2025 CVPR
Classic Video Denoising in a Machine Learning World
X. Jin, S. Niklaus, Z. Zhang, Z. Xia, C. L. Guo, Y. Yang, J. Chen, and C. Li
IEEE Conference on Computer Vision and Pattern Recognition

03.2024 TBD
Benchmarking Video Frame Interpolation
Simon Kiefhaber, Simon Niklaus, Feng Liu, and Simone Schaub-Meyer

01.2023 WACV
Splatting-based Synthesis for Video Frame Interpolation
Simon Niklaus, Ping Hu, and Jiawen Chen
IEEE Winter Conference on Applications of Computer Vision

01.2021 WACV
Revisiting Adaptive Convolutions for Video Frame Interpolation
Simon Niklaus, Long Mai, and Oliver Wang
IEEE Winter Conference on Applications of Computer Vision

01.2021 WACV
Learned Dual-View Reflection Removal
S. Niklaus, X. Zhang, J. T. Barron, N. Wadhwa, R. Garg, F. Liu, and T. Xue
IEEE Winter Conference on Applications of Computer Vision

06.2020 CVPR
Softmax Splatting for Video Frame Interpolation
Simon Niklaus, and Feng Liu
IEEE Conference on Computer Vision and Pattern Recognition

11.2019 TOG
3D Ken Burns Effect from a Single Image
Simon Niklaus, Long Mai, Jimei Yang, and Feng Liu
ACM Transactions on Graphics

06.2018 CVPR
Context-aware Synthesis for Video Frame Interpolation
Simon Niklaus, and Feng Liu
IEEE Conference on Computer Vision and Pattern Recognition

10.2017 ICCV
Video Frame Interpolation via Adaptive Separable Convolution
Simon Niklaus, Long Mai, and Feng Liu
IEEE International Conference on Computer Vision

07.2017 CVPR
Video Frame Interpolation via Adaptive Convolution
Simon Niklaus, Long Mai, and Feng Liu
IEEE Conference on Computer Vision and Pattern Recognition

Work Experience

12.2019 - Present
Senior Research Scientist
Adobe in San Jose
Investigating new algorithms related to novel view synthesis using deep learning.

07.2019 - 11.2019
Research Intern
Google in Mountain View
Investigated the use of dual views for learning-based reflection removal.

03.2018 - 06.2019
Research Intern
Adobe in San Jose
Created the first Moving Stills prototype to synthesize the 3D Ken Burns effect.

10.2012 - 03.2013
Engineering Intern
Fresenius in Schweinfurt
Created a monitoring and analysis tool for debugging embedded multiprocessor systems.

09.2011 - 02.2012
Engineering Intern
Fraunhofer in Nürnberg
Created a monitoring tool for Android and iOS to analyze embedded environments.

Academic Record

09.2015 - 03.2020
Doctor of Philosophy
Computer Science
Portland State University with a 4.0 GPA

Adviser	Feng Liu
Thesis	*Novel View Synthesis in Time and Space*
Instructor	CS 510 - Intro to Visual Computing CS 542 - Advanced Artificial Intelligence CS 565 - Full Stack Web Development
Google Summer of Code	2017 - Organization Admin for Portland State University 2016 - Student Mentor for Portland State University

03.2014 - 03.2015
Master of Science
Computer Science
Portland State University with a 4.0 GPA

Adviser	Bart Massey
Teaching Assistant	CS 684 - Algorithm Design and Analysis CS 399 - Special Studies / New Beginnings CS 201 - Computer Systems Programming

03.2013 - 03.2016
Master of Science
Information Systems
University of Applied Sciences Würzburg with a 4.0 GPA

Adviser	Frank Deinzer
Thesis	*Image Fusion for Novel View Synthesis*

10.2009 - 03.2013
Bachelor of Engineering
Computer Science
University of Applied Sciences Würzburg with a 4.0 GPA

Adviser	Eberhard Grötsch
Thesis	*Debugging Tools for Embedded Multiprocessor Systems*
Junior Assistant	CS 17 - Introduction to Databases CS 12 - Languages and Compiler Design CS 10 - Algorithms and Data Structures CS 06 - Introduction to Computer Science

Honors and Awards

09.2018 - 09.2019
Fellowship - 27000 Dollar
Maseeh Fellowship at PSU
Awarded to outstanding graduate students in the college.

09.2017 - 09.2018
Award - 7500 Dollar
Laurels Graduate Award at PSU
An award to competitively selected, academically meritorious graduate students.

07.2017
Award - 400 Dollar
Marie Brown Travel Award at PSU
A travel stipend to recognize outstanding work of graduate degree students.

03.2011 - 03.2015
Fellowship - 14400 Euro
Deutschlandstipendium at FHWS
A monthly financial support to high achieving students based on academic merit.

03.2013
Award - 600 Euro
Wolfgang Maria Fischer Award at FHWS
A monetary honor awarded to the best graduates in computer science.

Community Service

09.2007 - 03.2014
Volunteering
Lifeguard at the Wasserwacht in Schweinfurt
A voluntary lifeguard service that is part of the German Red Cross.