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Research Interests

Learning-based image and video processing, geometry processing.

Academic positions

Stanford University,

Mar 2022 - Now

Postdoctoral researcher

Advised by Prof. Gordon Wetzstein.

Education

ETH Zurich,

Fall 2017 - Oct 2021

Ph.D. in Computer Science

Dissertation title: Detail-driven geometry processing pipeling using neural networks, supervised by Prof. Olga Sorkine-Hornung.

ETH Zurich,

Fall 2014 - Fall 2016

Master of Science in Robotics, Systems and Control

Graduated with distinction.

Master Thesis: Semantic-Regional CNNs for Action Recognition, supervised by Prof. Otmar Hilliges.

ETH Zurich,

Fall 2013 - Spring 2014

ERASMUS program in Electrical Engineering

TU Munich,

Fall 2010 - Spring 2013

Bachelor of Science in Electrical Engineering and Information Technology

Graduated with distinction.

Bachelor Thesis: High Data Rate MIMO Configuration for LEO Satellite Communications.

Publications

- [1] PointAvatar: Deformable Point-based Head Avatars from Videos - Yufeng Zheng, **Wang Yifan**, Gordon Wetzstein, Michael J. Black, Otmar Hilliges. arXiv 2022.
- [2] Generative Neural Articulated Radiance Fields - Alexander W. Bergman*, Petr Kellnhofer*, **Wang Yifan***, Eric R. Chan*, David B. Lindell, Gordon Wetzstein. NeurIPS 2022. *equal contribution
- [3] Input-level Inductive Biases for 3D Reconstruction - **Wang Yifan**, Carl Doersch, Relja Arandjelović, João Carreira, Andrew Zisserman. CVPR 2022
- [4] Advances in neural rendering - Ayush Tewari, Justus Thies, Ben Mildenhall, Pratul Srinivasan, Edgar Tretschk, **Yifan Wang**, Christoph Lassner, Vincent Sitzmann, Ricardo Martin-Brualla, Stephen Lombardi, Tomas Simon, Christian Theobalt, Matthias Niessner, Jonathan T Barron, Gordon Wetzstein, Michael Zollhoefer, Vladislav Golyanik. Eurographics 2022
- [5] Geometry-Consistent Neural Shape Representation with Implicit Displacement Fields - **Wang Yifan**, Lukas Rahmann, Olga Sorkine-Hornung. ICLR 2022

- [6] Iso-Points: Optimizing Neural Implicit Surfaces with Hybrid Representations - **Wang Yifan**, Shihao Wu, Cengiz Öztireli, Olga Sorkine-Hornung. CVPR 2021
- [7] Neural Cages for Detail-Preserving 3D Deformations - **Wang Yifan**, Noam Aigerman, Vladimir Kim, Siddhartha Chaudhuri, Olga Sorkine-Hornung. CVPR 2020, **oral presentation**.
- [8] Differentiable surface splatting for point-based geometry processing. **Yifan Wang**, Felice Serena, Shihao Wu, Cengiz Öztireli, Olga Sorkine-Hornung. ACM Transactions on Graphics (TOG) 38.6 (2019): 1-14.
- [9] Blind image super resolution with spatially variant degradations - Victor Cornillère, Abdelaziz Djelouah, **Wang Yifan**, Olga Sorkine-Hornung, Christopher Schroers. ACM Transactions on Graphics (TOG) 38.6 (2019): 166.
- [10] Patch-based Progressive 3D Point Set Upsampling - **Wang Yifan**, Shihao Wu, Hui Huang, Daniel Cohen-Or and Olga Sorkine-Hornung. CVPR 2019.
- [11] A Fully Progressive Approach to Single-Image Super-Resolution - **Yifan Wang**, F. Perazzi, B. McWilliams, A. Sorkine-Hornung, O. Sorkine-Hornung, C. Schroers. CVPRW 2018.
- [12] Two-Stream SR-CNNs for Action Recognition in Videos - **Yifan Wang**, Jie Song, Limin Wang, Luc Van Gool and Otmar Hilliges. BMVC 2016.

Patents (including pending)

US patenting: Techniques For Performing Point-Based Inverse Rendering (US Patent App. 16/586,746)	2019
US patenting: Techniques for Upscaling Images Generated with Undetermined Downscaling Kernels (US Patent App. 16/542,227)	2019
US patenting: Video Super-Resolution Using An Artificial Neural Network (US Patent App. 15/886,625)	2017

Awards

<i>ETH Medal</i> Honor for outstanding dissertation	2022
<i>SNSF Postdoc.Mobility Fellowship</i> Sponsored 2-year postdoc program at Stanford	2022
<i>Apple Fellowship in AI/ML</i> Recipient in area "Augmented Reality and Computer Vision"	2020
<i>Facebook Fellowship</i> Finalist in area "Computer Graphics"	2020
<i>New Trends in Image Restoration and Enhancement Challenge</i> Winner Award in Track 1 and Honorable Mention in Tracks 2-4.	2018
<i>Heinrich und Lotte Münlfenzl-Stiftung</i> Selected recipient	2013

Research Internships

<i>DeepMind, (remote) London UK</i> geometry-aware video understanding	Jul 2021 - Nov 2021
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<i>Adobe Research, Seattle USA</i> deformation-based shape generation	Jun 2019 - Sep 2019
<i>AICFVE, Beijing China</i> Image-to-image translation	May 2017
<i>Disney Research, Zurich Switzerland</i> Image super-resolution	Fall 2016 - Feb 2017
<i>ETH Zurich, Zurich Switzerland</i> Action Recognition from Videos	May 2016 - Jul 2016
<i>BMW Research and Technology, Munich Germany</i> Hardware for augmented reality	May 2014 - Jul 2014

Invited Talks

<i>SFU Visual Computing Workshop (gruvi.cs.sfu)</i> Toward editable implicit shapes	Aug 2022
<i>Stanford Scien Colloquium (scien-colloquium-series)</i> "Neuralize" geometry processing pipeline	Mar 2022
<i>Toronto Geometry Colloquium (toronto-geometry-colloquium.github.io)</i> "Detail-Driven 3D Content Creation"	Feb 2021
<i>Graphics And Mixed Environment Seminar (games-cn.org)</i> "Detail-driven shape deformation"	Jun 2020

Teaching and Mentorship

Mentor	SGI	2022
Mentor	Network of Women in CS	2022
Lineare Algebra	ETH Zurich	2017 - 2020
Informatik for D-MAVT	ETH Zurich	2017 - 2020

Supervised master students

Lukas Rahmann	Master thesis	Sep 2020
Viviane Yang	Semester project	May 2020
Lixin Xue	Semester project	Jan 2020
Felice Serena	Semester project	Mar 2019
Lea auf der Maur	Master thesis	Feb 2019