

Elliott / Shangzhe Wu

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EMPLOYMENT

- 2025 - Assistant Professor at the Department of Engineering, *University of Cambridge*
- 2023 - Postdoctoral Researcher at *Stanford University*
- 2024 | Advisor: Jiajun Wu, Stanford Vision and Learning Lab
- 2020 | Research Intern at *Google Research*, NYC/London

EDUCATION

- 2018 - **Doctor of Philosophy (DPhil)**, *University of Oxford*
- 2022 | Advisors: Andrea Vedaldi and Christian Rupprecht, Visual Geometry Group
Thesis: "Unsupervised Learning of 3D Objects in the Wild"
Thesis Examiners: Andrew Zisserman, Vincent Sitzmann
- 2014 - **Bachelor of Science (BSc)**, *Hong Kong University of Science and Technology*
- 2018 | Double Major in Computer Science; and in Risk Management and Business Intelligence

AWARDS

- 2025 | NVIDIA Academic Grant
- 2024 | ECVA PhD Award
- 2023 | BMVA Sullivan Doctoral Thesis Prize
- | Outstanding Reviewer, ICCV 2025, NeurIPS 2023, 2022, ECCV 2022, CVPR 2021
- 2020 | Best Paper Award, CVPR 2020
- 2018 | Facebook Research Scholarship (3.5yr DPhil at Oxford)
- 2018 | HKUST Academic Achievement Medal (highest academic honor, top 1%)
- 2013 | First Prize in the Chinese High School Physics Olympiad, Provincial Level

STUDENTS ADVISED

Cambridge Research Team

- 2026 - Matt Zhou - visiting Researcher
- 2025 - Chexuan Qiao - PhD (co-advised with Roberto Cipolla)
- 2025 - Yuxin Yao - PhD (co-advised with Joan Lasenby)
- 2025 - Shenhan Qian - ELLIS PhD (co-advised with Daniel Cremers at TUM)
- 2025 - Ruining Li - visiting PhD (from University of Oxford)
- 2025 - Xiaoyang Lyu - visiting PhD (from University of Hong Kong)

Cambridge Undergraduate and Master's Students

- 2025 - Swarnim Jain - BA (Hons) in Computer Science
- 2025 - Charlie Shin - MEng in Engineering
- 2025 - Dennix Xu - MEng in Engineering
- 2025 - Ceylon Li - MEng in Engineering
- 2025 - 2025 | Sizhe Li - MPhil in Machine Learning and Machine Intelligence

Other Students

- 2026 - Fernando Cendra - Master, University of Hong Kong
- 2025 - Xiaoyang Liu - PhD, University of Hong Kong
- 2025 - Zhuoyang Pan - Master, University of Pennsylvania
- 2025 - Yanzhe Lyu - Undergrad, visiting at Stanford University, next PhD at Stanford
- 2024 - 2025 | Ben Kaye - PhD, University of Oxford

2024 -	Brian Zhao - Master, visiting at Stanford University, next PhD at UIUC
2024 - 2025	Guangzhao He - Undergrad, visiting at Stanford University, next PhD at Cornell
2024 - 2025	Yufan Deng - Undergrad, visiting at Stanford University, next PhD at Oxford
2024 - 2025	Yuhao Zhang - Undergrad, visiting at Stanford University, next PhD at Imperial
2024 - 2024	Haojun Qiu - Undergrad, visiting at Stanford University
2024 - 2024	Husam Jubran - Master, visiting at Stanford University, next PhD at EPFL
2023 -	Chen Geng - PhD, Stanford University
2023 - 2024	Frank Zhao - Undergrad, Stanford University
2023 - 2023	Mason Wang - Master, Stanford University, next PhD at MIT
2023 - 2023	Sharon Lee - Master, Stanford University, next PhD at Stanford
2023 - 2023	Zizhang Li - Master, visiting at Stanford University, next PhD at Stanford
2023 - 2023	Ryosuke Sawata - PhD, visiting at Stanford University
2022 - 2023	Minghao Yin - PhD, University of Hong Kong
2022 - 2023	Dor Litvak - Master, visiting at Stanford University, next PhD at UT Austin
2022 - 2024	Yunzhi Zhang - PhD, Stanford University, next xAI
2022 - 2022	Ruining Li - Undergrad, University of Oxford, next PhD at Oxford
2021 - 2023	Keqiang Sun - PhD, Chinese University of Hong Kong, next startup
2021 - 2021	Felix Wimbauer - Master, University of Oxford, next PhD at TUM

INVITED TALKS

Modeling the Physical Natural World from Images

2025	University of Illinois Urbana-Champaign
2025	BMVC Workshop on Multisensory Intelligence for Human Perception
2025	University of Bristol
2025	Cambridge ELLIS Seminar
2025	ELLIS Workshop on Vision and Graphics, Tubingen
2025	Technical University of Munich
2024	University of Queensland
2024	University of Cambridge

Learning 3D Fauna and Flora in the Wild

2024	University of Michigan
2024	Carnegie Mellon University
2023	Cornell Tech
2023	University of Pennsylvania

Learning Dynamic 3D Objects in the Wild

2023	Bay Area Computer Vision Day, Stanford
2023	BIRS Workshop on 3D Generative Models, Banff
2023	Johns Hopkins University
2023	Chinese University of Hong Kong
2023	University of Hong Kong
2022	Peking University
2022	Northwestern Polytechnical University, China

Unsupervised Learning of 3D Objects in the Wild

2022	University of California, San Diego
2021	MIT
2021	Stanford University
2021	Nanyang Technological University
2021	Fudan University
2020	École des Ponts ParisTech
2020	Tsinghua University
2020	University of Toronto
2020	CVPR Workshop on Fair, Data-Efficient and Trusted Computer Vision

TEACHING

MLM17: Advanced Computer Vision

Lent 2026

4M26: Algorithms and Data Structures

Lent 2026

Exposition

Michaelmas 2025

ACADEMIC SERVICES

Area Chair

CVPR 2026, 2025, ECCV 2026, 2024, ICLR 2026, ICML 2026, 3DV 2026, 2024

Guest Editor

IJCV 2025, 2024

Reviewer

CVPR, ICCV, ECCV, NeurIPS, ICLR, SIGGRAPH, SIGGRAPH Asia, Eurographics, IJCV, TMLR, TIP, TVCG

Workshop Organizer

2026	CVPR Workshop on “Visual General Intelligence”
2026	CVPR Workshop on “4D Vision: Modeling the Dynamic World”
2026	CVPR Workshop on “Visual Concepts”
2026	CVPR Workshop on “CV4Animals: Computer Vision for Animal Behavior Tracking and Modeling”
2025	ICCV Workshop on “Binocular Egocentric-360 Multi-modal Scene Understanding in the Wild”
2025	CVPR Workshop on “4D Vision: Modeling the Dynamic World”
2025	CVPR Workshop on “CV4Animals: Computer Vision for Animal Behavior Tracking and Modeling”
2025	CVPR Workshop on “Visual Concepts”
2024	ECCV Workshop on “Visual Concepts”
2024	CVPR Workshop on “CV4Animals: Computer Vision for Animal Behavior Tracking and Modeling”
2022	ECCV Workshop on “Neural Geometry and Rendering: Advances and the Common Objects in 3D Challenge”
2021	ICCV Workshop on “Unsup3D: Unsupervised 3D Learning in the Wild”

PUBLICATIONS

(* and † denote equal contribution or alphabetical order)

- [31] Chen Geng, Guangzhao He, Yue Gao, Yunzhi Zhang, Shangzhe Wu, and Jiajun Wu. “NeuROK: Generative 4D Neural Object Kinematics”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2026.
- [30] Ruining Li*, Yuxin Yao*, Chuanxia Zheng, Christian Rupprecht, Joan Lasenby†, Shangzhe Wu†, and Andrea Vedaldi†. “Particulate: Feed-Forward 3D Object Articulation”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2026.
- [29] Yanzhe Lyu, Chen Geng, Karthik Dharmarajan, Yunzhi Zhang, Hadi Alzayer, Shangzhe Wu, and Jiajun Wu. “Choreographing a World of Dynamic Objects”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2026.

- [28] Xiaoyang Liu, Shangzhe Wu, and Kai Han. “Scene-Level Heterogeneous Physics Simulation with 3D Gaussian Splats”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Findings Track*. 2026.
- [27] Swarnim Jain and Shangzhe Wu. “RigidBench: Evaluating Rigid-Body Physics in Video Generation Models”. In: *International Conference on Learning Representations (ICLR) World Models Workshop*. 2026.
- [26] Yufan Deng*, Yuhao Zhang*, Chen Geng, Shangzhe Wu[†], and Jiajun Wu[†]. “Anymate: A Dataset and Baselines for Learning 3D Object Rigging”. In: *ACM Special Interest Group on Computer Graphics and Interactive Techniques Conference (SIGGRAPH)*. 2025.
- [25] Chen Geng, Yunzhi Zhang, Shangzhe Wu, and Jiajun Wu. “Birth and Death of a Rose”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2025. (Oral).
- [24] Guangzhao He*, Chen Geng*, Shangzhe Wu, and Jiajun Wu. “Category-Agnostic Neural Object Rigging”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2025.
- [23] Ben Kaye*, Tomas Jakab*, Shangzhe Wu, Christian Rupprecht, and Andrea Vedaldi. “DualPM: Dual Posed-Canonical Point Maps for 3D Shape and Pose Reconstruction”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2025. (Highlight).
- [22] Yunzhi Zhang, Zizhang Li, Matt Zhou, Shangzhe Wu, and Jiajun Wu. “The Scene Language: Representing Scenes with Programs, Words, and Embeddings”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2025. (Highlight).
- [21] Brian Nlong Zhao, Jiajun Wu[†], and Shangzhe Wu[†]. “Web-Scale Collection of Video Data for 4D Animal Reconstruction”. In: *Neural Information Processing Systems (NeurIPS) Datasets and Benchmarks Track*. 2025.
- [20] Keqiang Sun*, Dor Litvak*, Yunzhi Zhang, Hongsheng Li, Jiajun Wu[†], and Shangzhe Wu[†]. “Pony-mation: Learning Articulated 3D Animal Motions from Unlabeled Online Videos”. In: *European Conference on Computer Vision (ECCV)*. 2024.
- [19] Zizhang Li*, Dor Litvak*, Ruining Li, Yunzhi Zhang, Tomas Jakab, Christian Rupprecht, Shangzhe Wu[†], Andrea Vedaldi[†], and Jiajun Wu[†]. “Learning the 3D Fauna of the Web”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2024.
- [18] Mason Wang*, Ryosuke Sawata*, Samuel Clarke, Ruohan Gao, Shangzhe Wu, and Jiajun Wu. “Hearing Anything Anywhere”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2024.
- [17] Minghao Yin, Shangzhe Wu, and Kai Han. “IBD-SLAM: Learning Image-Based Depth Fusion for Generalizable SLAM”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2024.
- [16] Tomas Jakab*, Ruining Li*, Shangzhe Wu, Christian Rupprecht, and Andrea Vedaldi. “Farm3D: Learning Articulated 3D Animals by Distilling 2D Diffusion”. In: *International Conference on 3D Vision (3DV)*. 2024.
- [15] Sharon Lee*, Yunzhi Zhang*, Shangzhe Wu, and Jiajun Wu. “Language-Informed Visual Concept Learning”. In: *International Conference on Learning Representations (ICLR)*. 2024.
- [14] Keqiang Sun, Shangzhe Wu, Zhaoyang Huang, Ning Zhang, Quan Wang, and Hongsheng Li. “CGOF++: Controllable 3D Face Synthesis with Conditional Generative Occupancy Fields”. In: *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)* (2023).
- [13] Shangzhe Wu*, Ruining Li*, Tomas Jakab*, Christian Rupprecht, and Andrea Vedaldi. “MagicPony: Learning Articulated 3D Animals in the Wild”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2023.
- [12] Yunzhi Zhang, Shangzhe Wu, Noah Snaveley, and Jiajun Wu. “Seeing a Rose in Five Thousand Ways”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2023.

- [11] Shangzhe Wu*, Tomas Jakob*, Christian Rupprecht, and Andrea Vedaldi. “DOVE: Learning Deformable 3D Objects by Watching Videos”. In: *International Journal of Computer Vision (IJCV)* (2023).
- [10] Zhengfei Kuang*, Yunzhi Zhang*, Hong-Xing Yu, Samir Agarwala, Shangzhe Wu, and Jiajun Wu. “Stanford-ORB: A Real-World 3D Object Inverse Rendering Benchmark”. In: *Neural Information Processing Systems (NeurIPS) Datasets and Benchmarks Track*. 2023.
- [9] Keqiang Sun*, Shangzhe Wu*, Zhaoyang Huang, Ning Zhang, Quan Wang, and Hongsheng Li. “Controllable 3D Face Synthesis with Conditional Generative Occupancy Fields”. In: *Advances in Neural Information Processing Systems (NeurIPS)*. 2022. (Spotlight).
- [8] Felix Wimbauer, Shangzhe Wu, and Christian Rupprecht. “De-rendering 3D Objects in the Wild”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2022.
- [7] Shangzhe Wu, Christian Rupprecht, and Andrea Vedaldi. “Unsupervised Learning of Probably Symmetric Deformable 3D Objects from Images in the Wild”. In: *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)* (2021).
- [6] Shangzhe Wu, Ameesh Makadia, Jiajun Wu, Noah Snavely, Richard Tucker, and Angjoo Kanazawa. “De-rendering the World’s Revolutionary Artefacts”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2021.
- [5] Tim Y. Tang, Daniele De Martini, Shangzhe Wu, and Paul Newman. “Self-Supervised Learning for Using Overhead Imagery as Maps in Outdoor Range Sensor Localization”. In: *International Journal of Robotics Research (IJRR)* (2021).
- [4] Shangzhe Wu, Christian Rupprecht, and Andrea Vedaldi. “Unsupervised Learning of Probably Symmetric Deformable 3D Objects from Images in the Wild”. In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2020. (Best Paper Award).
- [3] Tim Y. Tang, Daniele De Martini, Shangzhe Wu, and Paul Newman. “Self-Supervised Localisation between Range Sensors and Overhead Imagery”. In: *Robotics: Science and Systems (RSS)*. 2020.
- [2] Yongyi Lu, Shangzhe Wu, Yu-Wing Tai, and Chi-Keung Tang. “Image Generation from Sketch Constraint Using Contextual GAN”. In: *European Conference on Computer Vision (ECCV)*. 2018.
- [1] Shangzhe Wu, Jiarui Xu, Yu-Wing Tai, and Chi-Keung Tang. “Deep High Dynamic Range Imaging with Large Foreground Motions”. In: *European Conference on Computer Vision (ECCV)*. 2018.