Junlin Han

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Education

University of Oxford 01.2024 – ongoing
PhD (Dphil) in Computer Vision Oxford, UK
Supervised by Prof. Philip Torr

Australian National University 02.2019 – 07.2023
Bachelor of Information Technology (Honours) Canberra, Australia
GPA: 3.95/4.00 First-Class Honours

Research Interests

My research focus on computer vision, deep learning, and artificial intelligence, with a particular concentration on studying data. This entails exploring:
(1) **Generation** and **manipulation** of 2D, 3D, and 4D visual data,
(2) Use **augmented, synthetic, and distilled** data for training machine learning systems,
(3) Understand the **role of data** through cognitive perspectives.
I am also interested in extending my research to other scientific domains, such as exploring the applications of AI in the field of health and biology.

Experience

PhD Student Researcher 10.2023 – ongoing
GenAI, Meta London, UK
Host: Dr. Filippos Kokkinos
Topics: 3D&4D generation

Research Intern 12.2021 – 05.2023
AIML, University of Adelaide Adelaide, Australia
Advisor: Prof. Ian Reid
Topics: Data-centric AI, memorability

Research Student 08.2020 – 05.2023
Data61-CSIRO & Australian National University Canberra, Australia
Advisors: Dr. Lars Petersson and Prof. Hongdong Li
Topics: Generative models, self-supervised learning

Selected Publications (as leading author)

See my webpage for full publications, codes, datasets, and project pages, etc.

4. VFusion3D: Learning Scalable 3D Generative Models from Video Diffusion Models
   Junlin Han*, Filippos Kokkinos*, Philip Torr
   European Conference on Computer Vision (ECCV), 2024

3. What Images are More Memorable to Machines?
   Junlin Han, Huangying Zhan, Jie Hong, Pengfei Fang, Hongdong Li, Lars Petersson, Ian Reid
   Preprint arXiv:2211.07625

2. You Only Cut Once: Boosting Data Augmentation with a Single Cut
   Junlin Han, Pengfei Fang, Weihao Li, Jie Hong, Ali Armin, Ian Reid, Lars Petersson, Hongdong Li
   International Conference on Machine Learning (ICML), 2022

1. Blind Image Decomposition
   Junlin Han, Weihao Li, Pengfei Fang, Chunyi Sun, Jie Hong, Ali Armin, Lars Petersson, Hongdong Li
   European Conference on Computer Vision (ECCV), 2022

Academic Services

Workshop organization: Foundation Models in the Wild, ICML 2024
Conference review:CVPR 2022 2023 2024, ICCV 2023, ECCV 2022 2024, ICML 2022 2024, NeurIPS 2022 2023, ICLR 2023 2024, SIGGRAPH Asia 2024, ACCV 2022, BMVC 2023, WACV 2024, AAAI 2023
Journal review: Transactions on Image Processing (TIP), Transactions on Geoscience and Remote Sensing (TGRS)

Technical Skills

Programming Languages: Proficient in Python, MATLAB
Familiar with Java, SQL, HTML/CSS, R, Haskell, Assembly (ARMV7)
Developer Tools: Git, Latex, VS Code, Visual Studio, PyCharm, IntelliJ, Jupyter Notebook
Libraries: PyTorch, NumPy

Awards

Meta PhD Scholarship 2023
for PhD research at University of Oxford

Chancellor's Letter of Commendation 2022
for best academic performance at Australian National University

Top Reviewer 2022
NeurIPS (Conference on Neural Information Processing Systems)

Second Best Presentation Award 2021
AIM (Active Integrated Matter) Conference

Top-up Scholarship 2021
for research work at Data61-CSIRO

Undergraduate Vacation Scholarship 2020
for summer research at Data61-CSIRO

Full Publications

15. VFusion3D: Learning Scalable 3D Generative Models from Video Diffusion Models
    Junlin Han*, Filippos Kokkinos*, Philip Torr
    European Conference on Computer Vision (ECCV), 2024

14. Strong and Controllable Blind Image Decomposition
    Zeyu Zhang*, **Junlin Han***, Chenhui Gou*, Hongdong Li, Liang Zheng
    Preprint arXix:2403.10520

13. How Many Unicorns Are in This Image? A Safety Evaluation Benchmark for Vision LLMs
    Haoqin Tu*, Chenhang Cui*, Zijun Wang*, Yiyang Zhou, Bingchen Zhao, **Junlin Han**, Wangchunshu Zhou, Huaxiu Yao, Cihang Xie
    European Conference on Computer Vision (ECCV), 2024

12. 3D-GPT: Procedural 3D Modeling with Large Language Models
    Chunyi Sun*, **Junlin Han***, Weijian Deng, Xinlong Wang, Zishan Qin, Stephen Gould
    Preprint arXiv:2310.12945

11. NeRFEditor: Differentiable Style Decomposition for 3D Scene Editing
    Chunyi Sun, Yanbin Liu, **Junlin Han**, Stephen Gould
    IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2024

10. Hyperbolic Audio-visual Zero-shot Learning
    Jie Hong, Zeeshan Hayder, **Junlin Han**, Pengfei Fang, Mehrtash Harandi, Lars Petersson
    International Conference on Computer Vision (ICCV), 2023

9. Curved Geometric Networks for Visual Anomaly Recognition

   Jie Hong, Pengfei Fang, Weihao Li, **Junlin Han**, Lars Petersson, Mehrtash Harandi

   IEEE Transactions on Neural Networks and Learning Systems (TNNLS), 2023

8. What Images are More Memorable to Machines?

   Junlin Han, Huangying Zhan, Jie Hong, Pengfei Fang, Hongdong Li, Lars Petersson, Ian Reid

   Preprint arXiv:2211.07625

7. GOSS: Towards Generalized Open-set Semantic Segmentation

   Jie Hong, Weihao Li, **Junlin Han**, Jiyang Zheng, Pengfei Fang, Mehrtash Harandi, Lars Petersson

   The Visual Computer, 2023

6. CropMix: Sampling a Rich Input Distribution via Multi-Scale Cropping

   Junlin Han, Lars Petersson, Hongdong Li, Ian Reid

   Preprint arXiv:2205.15955

5. You Only Cut Once: Boosting Data Augmentation with a Single Cut

   Junlin Han, Pengfei Fang, Weihao Li, Jie Hong, Ali Armin, Ian Reid, Lars Petersson, Hongdong Li

   International Conference on Machine Learning (ICML), 2022

4. Blind Image Decomposition

   Junlin Han, Weihao Li, Pengfei Fang, Chunyi Sun, Jie Hong, Ali Armin, Lars Petersson, Hongdong Li

   European Conference on Computer Vision (ECCV), 2022

3. Underwater Image Restoration via Contrastive Learning and a Real-world Dataset

   Junlin Han, Mehrdad Shoeiby, Tim Malthus, Elizabeth Botha, Janet Anstee, Saeed Anwar, Ran Wei, Ali Armin, Hongdong Li, Lars Petersson

   Remote Sensing, 2022

2. Single Underwater Image Restoration by Contrastive Learning

   Junlin Han, Mehrdad Shoeiby, Tim Malthus, Elizabeth Botha, Janet Anstee, Saeed Anwar, Ran Wei, Lars Petersson, Ali Armin

   IEEE International Geoscience and Remote Sensing Symposium (IGARSS, oral), 2021

1. Dual Contrastive Learning for Unsupervised Image-to-Image Translation

   Junlin Han, Mehrdad Shoeiby, Lars Petersson, Ali Armin

   New Trends in Image Restoration and Enhancement workshop (NTIRE), IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW, oral), 2021