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 ***achieving human-like machine intelligence through 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
Facebook AI Research (FAIR), Meta London, UK
Host: Dr. Filippos Kokkinos
Generative models for 3D creation

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

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

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

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

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

Professional Activities

Conference review: CVPR 2022 2023, NeurIPS 2022 2023, ICML 2022, ECCV 2022, ICLR 2023 2024, ICCV 2023, ACCV 2022, AAAI 2023, BMVC 2023, WACV 2O24
Journal review: Transactions on Image Processing (TIP), Transactions on Geoscience and Remote Sensing (TGRS), Pattern Recognition, Neurocomputing, Journal of Oceanic Engineering (JOE)
Workshop review: NTIRE (CVPRW) 2021

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

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

13. 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

12. CropMix: Sampling a Rich Input Distribution via Multi-Scale Cropping
    Junlin Han, Lars Petersson, Hongdong Li, Ian Reid
    Preprint arXiv:2205.15955

11. 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

10. 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

9. 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

8. 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

7. 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

6. 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

5. SFD: Structure from Deformable Neural Point Field
   Chunyi Sun, Huangying Zhan, **Junlin Han**, Stephen Gould
   Under review

4. 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

3. NeRFEditor: Differentiable Style Decomposition for Full 3D Scene Editing
   Chunyi Sun, Yanbin Liu, **Junlin Han**, Stephen Gould
   Preprint arXiv:2212.03848

2. 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

1. 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