


Xinyue Hao

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Research Interest

Improving **efficiency** in visual tasks, particularly **video understanding**.

- **Inference stage:** token selection
- **Training stage:** dataset pruning, data influence
- **Models:** VideoLLMs, Vision Transformers

Education

The University of Edinburgh Sep. 2022 – Present
Ph.D. in Centre for Doctoral Training in Robotics and Autonomous Systems Edinburgh, UK

Supervisors: Prof. Laura Sevilla-Lara, Prof. Robert Fisher

The University of Edinburgh Sep. 2020 – Aug. 2021
M.Sc in Artificial Intelligence Edinburgh, UK

Course GPA: Distinction

Supervisor: Prof. Hakan Bilen

Thesis: Informative Novelty Detection for Visual Object Recognition

Beijing University of Posts and Telecommunications Sep. 2016 – Jun. 2020
B.Eng in Telecommunications Engineering with Management Beijing, China

Overall GPA: 89/100 (Top 5%)

Current Project

Influence-Based Data Selection for Target Tasks in VideoLLMs Jan. 2026 – Present
Ongoing work Edinburgh, UK

- Analyze the impact of different modalities and training data on target tasks using data influence methods.
- Develop an efficient algorithm for selecting task-relevant data.

Selected Publications

[1] **Progressive Data Dropout: An Embarrassingly Simple Approach to Faster Training.**

Shriram M S*, **Xinyue Hao***, Shihao Hou, Yang Lu, Laura Sevilla-Lara, Anurag Arnab, Shreyank N. Gowda
* *Equal Contribution.*

Advances in Neural Information Processing Systems (NeurIPS), 2025.

[2] **Principles of Visual Tokens for Efficient Video Understanding.**

Xinyue Hao, Gen Li, Shreyank N. Gowda, Robert B. Fisher, Jonathan Huang, Anurag Arnab, Laura Sevilla-Lara
International Conference on Computer Vision (ICCV), 2025.

Other Publications

- [1] **Avenir-Web: Human-Experience-Imitating Multimodal Web Agents with Mixture of Grounding Experts.**

Aiden Yiliu Li, **Xinyue Hao**, Shilong Liu, Mengdi Wang
Under Review, 2026.

- [2] **It's a Matter of Time: Three Lessons on Long-Term Motion for Perception.**

Willem Davison, **Xinyue Hao**, Laura Sevilla-Lara
Under Review, 2026.

- [3] **Watt for what: Rethinking deep learning's energy-performance relationship.**

Shreyank N. Gowda, **Xinyue Hao**, Gen Li, Shashank Narayana Gowda, Xiaobo Jin, and Laura Sevilla-Lara
European Conference on Computer Vision Workshop (ECCV Workshop), 2024.

- [4] **OpenLORIS-Object: A robotic vision dataset and benchmark for lifelong deep learning.**

Qi She, Fan Feng, **Xinyue Hao**, Qihan Yang, Chuanlin Lan, Vincenzo Lomonaco, Xuesong Shi et al.
IEEE international conference on robotics and automation (ICRA), 2020.

Work & Intern Experience

Alibaba

Algorithm Engineer

Jan. 2022 – Jul. 2022

Beijing, China

- Responsible for improving the pre-ranking algorithm in Lazada's advertisement recommendation system.

ByteDance

Research Intern

Aug. 2021 – Dec. 2021

Beijing, China

- Responsible for improving the personalized ranking algorithm in the Douyin advertising recommendation system.

Skills Summary

- **Programming:** Python, Java, C, Latex, Matlab
- **Languages:** Chinese (native), English (fluent)

Professional Service

- **Conference Reviewer:** CVPR, ECCV, NeurIPS
- **Teaching Assistant (MSc courses):** Machine Learning Practical, Applied Machine Learning, Computer Vision