

Nanbo Li

Ph.D.

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My primary research interests focus on *world models*, *sequence modelling*, and *uncertainty estimation*. I am passionate about exploring fundamental challenges in these areas, as well as their practical applications in such as computer vision, finance, and natural language processing.

WORK EXPERIENCE

KAUST Centre of Excellence for Generative AI

Post-doctoral Fellow

Saudi Arabia

March 2024–Present

- Work on world models and deep learning architectures
- Advisor: Prof. Jürgen Schmidhuber

Meta (Facebook), The Reality Labs

Research Intern

Zurich, Switzerland

Fall 2021

NEC Laboratories America. Inc

Research Intern

San Jose, CA, USA

Summer 2021

EDUCATION

The University of Edinburgh

Ph.D., Machine Learning

Edinburgh, UK

2018–2022

- Worked on probabilistic generative models, factorisation, and representation learning
- Supervisors: Prof. Robert Fisher and Prof. Chris Williams

The University of Edinburgh

*M.Sc., Artificial Intelligence (with **Distinction** honours)*

Edinburgh, UK

2016–2017

Wuhan University of Technology

*B.Eng., Automation Engineering (with **Outstanding Engineers** honours)*

Wuhan, China

2012–2016

SCHOLARSHIPS AND AWARDS

School of Informatics Scholarship

School of Informatics, The University of Edinburgh

Edinburgh, UK

2018

PUBLICATIONS

- FACTS: A Factored State-Space Framework For World Modelling
Li Nanbo, Firas Laakom, Yucheng Xu, Wenyi Wang, Jürgen Schmidhuber
International Conference on Learning Representations (ICLR), 2025
- Learning Object-Centric Representations of Multi-Object Scenes from Multiple Views
Li Nanbo, Cian Eastwood, Robert B. Fisher
Advances in Neural Information Processing Systems (NeurIPS), 2020 (**Spotlight Presentation**)

3. Object-Centric Representation Learning with Generative Spatial-Temporal Factorization
Li Nanbo, Muhammad Ahmed Raza, Hu Wenbin, Zhaole Sun, Robert B. Fisher
Advances in Neural Information Processing Systems (NeurIPS), 2021
4. Duplicate Latent Representation Suppression for Multi-Object Variational Autoencoders
Li Nanbo, Robert B. Fisher
The British Machine Vision Conference (BMVC), 2021
5. Align-Deform-Subtract: An Interventional Framework for Explaining Object Differences
Cian Eastwood^{1†}, **Li Nanbo**^{1†}, CKI Williams
International Conference on Learning Representations (ICLR) Workshop: Objects, Structure and Causality, 2022
6. Hybrid Multi-Camera Visual Servoing to Moving Target
Hanz Cuevas-Velasquez^{1†}, **Nanbo Li**^{1†}, Radim Tylecek, Marcelo Saval-Calvo, Robert B. Fisher
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2018
7. TiV-ODE: A Neural ODE-based Approach for Controllable Video Generation From Text-Image Pairs
Yucheng Xu, **Li Nanbo**, Arushi Goel, Zijian Guo, Zonghai Yao, Hamidreza Kasaei, Mohammadreza Kasaei, Zhibin Li
IEEE International Conference on Robotics and Automation (ICRA), 2024
8. DUGMA: Dynamic Uncertainty-Based Gaussian Mixture Alignment
Can Pu, **Nanbo Li**, Radim Tylecek, Robert B. Fisher
International Conference on 3D Vision (3DV), 2018 (**Oral Presentation**)
9. A Robust Deformable Linear Object Perception Pipeline in 3D: From Segmentation to Reconstruction
Sun Zhaole, Hang Zhou, **Li Nanbo**, Longfei Chen, Jihong Zhu, Robert B Fisher
IEEE Robotics and Automation Letters (RA-L), 2023
10. *EatSense: Human Centric, Action Recognition and Localization Dataset for Understanding Eating Behaviors and Quality of Motion Assessment*
Muhammad Ahmed Raza, Longfei Chen, **Li Nanbo**, Robert B Fisher
Image and vision computing, 2023
11. *SDF-MAN: Semi-Supervised Disparity Fusion with Multi-Scale Adversarial Networks*
Can Pu, Runzi Song, Radim Tylecek, **Nanbo Li**, Robert B Fisher
Remote Sensing, 2019

(^{1†} equal contribution)