

# XINGZHE HE

xingzhe@cs.ubc.ca

[Homepage](#)

## EDUCATION

---

**University of British Columbia, Canada**

*2020-present*

Ph.D. in Computer Science

*advised by Professor Helge Rhodin*

**Rutgers University, USA**

*2017-2019*

Master of Science in Data Science

**University of Liverpool, UK**

*2015-2017*

Bachelor of Science with Honors in Mathematics with Finance

**Xi'an Jiaotong-Liverpool University**

*2013-2015*

Bachelor of Economics with Honors in Financial Mathematics

## PUBLICATIONS

---

1. Few-shot Geometry-Aware Keypoint Localization  
**Xingzhe He**, Gaurav Bharaj, David Ferman, Helge Rhodin, Pablo Garrido  
In Submission
2. AutoLink: Self-supervised Learning of Human Skeletons and Object Outlines by Linking Keypoints [\[pdf\]](#) [\[project\]](#)  
**Xingzhe He**, Bastian Wandt, Helge Rhodin  
NeurIPS 2022 (Spotlight ~ 3% acceptance rate)
3. GANSeg: Learning to Segment by Unsupervised Hierarchical Image Generation [\[pdf\]](#)  
**Xingzhe He**, Bastian Wandt, Helge Rhodin  
CVPR 2022
4. LatentKeypointGAN: Controlling GANs via Latent Keypoints [\[pdf\]](#) [\[project\]](#)  
**Xingzhe He**, Bastian Wandt, Helge Rhodin  
CVPRW 2022
5. Symplectic Neural Networks in Taylor Series Form for Hamiltonian Systems [\[pdf\]](#) [\[project\]](#)  
Yunjin Tong\*, Shiyong Xiong\*, **Xingzhe He**, Guanghan Pan, Bo Zhu  
Journal of Computational Physics
6. Nonseparable Symplectic Neural Networks [\[pdf\]](#) [\[project\]](#)  
Shiyong Xiong, Yunjin Tong, **Xingzhe He**, Shuqi Yang, Cheng Yang, Bo Zhu  
ICLR 2021
7. Learning Physical Constraints with Neural Projections [\[pdf\]](#) [\[project\]](#)  
Shuqi Yang, **Xingzhe He**, Bo Zhu  
NeurIPS 2020
8. AdvectiveNet: An Eulerian-Lagrangian Fluidic Reservoir for Point Cloud Processing [\[pdf\]](#)  
**Xingzhe He**, Helen L. Cao, Bo Zhu  
ICLR 2020

9. Soft Multicopter Control using Neural Dynamics Identification [\[pdf\]](#) [\[video\]](#)  
Yitong Deng, Yaorui Zhang, **Xingzhe He**, Shuqi Yang, Yunjin Tong, Michael Zhang, Daniel M. DiPietro, Bo Zhu  
CoRL 2020

## EXPERIENCE

---

### Research Intern

Jun 2022 - Nov 2022

*Flawless AI, advised by Pablo Garrido and Gaurav Bharaj*

*Santa Monica, CA, USA*

- Detect 3D keypoint from single static images with few-shot 2D keypoint annotations.
- Model mouth area with sparse 3D keypoints.

### Visiting Researcher

Jan 2019 - Aug 2020

*Dartmouth College, advised by Professor Bo Zhu*

*Hanover, NH, USA*

- Applied deep learning to solve physics problems, including solving PDEs and predicting interaction between objects and particles.
- Applied knowledge of physics to improve deep learning and make neural networks more interpretable.
- Gave tutorials on computer vision, and neural-based physics to visiting students and undergrad students.

### Research Intern

Jun - Aug 2017

*Satsafe*

*Liverpool, UK*

- Developed a machine learning-based scoring system to determine the insurance cost based on GPS trajectories of drivers.

### Research Intern

Jul - Nov 2016

*Barnett Waddingham*

*Liverpool, UK*

- Developed a risk model for universities to determine the insurance cost.

## PROGRAMMING LANGUAGES

---

Python