

# YITAO XU

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## EDUCATION

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| <b>Ph.D. in Computer Science</b> , EDIC, École Polytechnique Fédérale de Lausanne, EPFL  | 2023-Present |
| <b>M.Sc. Computer Science</b> , Exchange, École Polytechnique Fédérale de Lausanne, EPFL | 2022-2023    |
| <b>M.Sc. Machine Learning</b> , KTH Royal Institute of Technology                        | 2021-2023    |
| <b>B.Eng. Computer Science</b> , Beihang University                                      | 2016-2020    |

## PUBLICATIONS

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### PUBLISHED

- Ehsan Pajouheshgar\*, **Yitao Xu**\*, Alexander Mordvintsev, et al. *Mesh Neural Cellular Automata*. SIGGRAPH, 2024.
- Ehsan Pajouheshgar, **Yitao Xu**, and Sabine Süsstrunk. *NoiseNCA: Noisy Seed Improves Spatio-Temporal Continuity of Neural Cellular Automata*. ALife 2024.
- Yitao Xu**, Ehsan Pajouheshgar, and Sabine Süsstrunk. *Emergent Dynamics in Neural Cellular Automata*. ALife 2024.
- Ehsan Pajouheshgar\*, **Yitao Xu**\*, Tong Zhang, and Sabine Süsstrunk. *DyNCA: Real-time Dynamic Texture Synthesis Using Neural Cellular Automata*. CVPR, 2023.
- Tianlin Li, Aishan Liu, Xianglong Liu, **Yitao Xu**, et al. *Understanding Adversarial Robustness Via Critical Attacking Route*. Information Sciences, 2021.
- Aishan Liu, Tairan Huang, Xianglong Liu, **Yitao Xu**, et al. *Spatiotemporal Attacks For Embodied Agents*. ECCV, 2020.
- Chongzhi Zhang, Aishan Liu, Xianglong Liu, **Yitao Xu**, et al. *Interpreting and Improving Adversarial Robustness of Deep Neural Networks With Neuron Sensitivity*. IEEE Transactions on Image Processing, 2020.

### PREPRINT

- Yitao Xu**, Tong Zhang, and Sabine Süsstrunk. *AdaNCA: Neural Cellular Automata As Adaptors For More Robust Vision Transformer*. arXiv preprint, <https://arxiv.org/abs/2406.08298>, 2024.

\*: Equal contribution.

## RESEARCH EXPERIENCE

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**-Research Intern, Image and Visual Representation Lab, EPFL** 06.2022 - 09.2023

-Advisor: [Ehsan Pajouheshgar](#), [Prof. Sabine Süsstrunk](#)

Topic: Real-time Dynamic Texture Synthesis using Neural Cellular Automata

**-Research Assistant, Tsinghua Laboratory of Brain and Intelligence, Tsinghua University**

-Advisor: [Prof. Jia Liu](#)

11.2020 - 05.2021

Topic: Towards Machines Understanding Physics: Block Tower Stability Inference

**-Research Intern, State Key Laboratory of Software Development Environment, Beihang University**

-Advisor: [Prof. Xianglong Liu](#)

04.2019 - 05.2020

Topic 1: Interpreting Convolutional Neural Networks (CNN) with Neuron Sensitivity

Topic 2: Adversarial Attack against the Agent in Embodied Question Answering

### Topic 3: Analysis and Rectification of Texture Bias in Convolutional Neural Networks

## WORK EXPERIENCE

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**-Machine Learning Intern, DiDi AI Labs, DiDi Global Inc.** 06.2020 - 11.2020

*-Group Leader: [Dr. Zhengping Che](#), [Prof. Jian Tang](#)*

**Project 1: Embedded Real-time UAV Pedestrian Detection**

**Project 2: 3D LiDAR Point Cloud Object Detection on nuScenes Dataset**

## HONOURS AND AWARDS

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- **Outstanding Undergraduate** of Beihang University, 11.2019
- **Outstanding Undergraduate** of Beihang University, 11.2018
- **Outstanding Undergraduate** of Beihang University, 11.2017
- **Scholarship for Academic Merit**, Beihang University, 09.2016

## TEACHING

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**-Department of Psychology, Tsinghua University**

**Course: Advances in Cognitive Science** 02.2021 - 05.2021

- A 2-hour lecture on the development of Symbolism. [slides](#).