

# Xingjian Zhang

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## Education

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<b>École Polytechnique, Institut Polytechnique de Paris</b>	France
PhD. candidate in AI for Biomechanics	2023 - Now
M.S. in Biomechanics and Biomedical Engineering	2021 - 2023
B.S. in Computer Science and Mathematics	2018 - 2021

## Publications

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### Peer-reviewed

- 1 *Modeling and predicting second harmonic generation from protein molecular structure*, Physical Review X, 2024  
B. Asadipour, E. Beaurepaire, [X. Zhang](#), A. Chessel, P. Mahou, W. Supatto, MC. Schanne-Klein, C. Stringari
- 2 *Myoblast mutation classification via microgroove-induced nuclear deformations*, Medical Imaging with Deep Learning, 2024  
[X. Zhang](#), C. Leclech, B. Roellinger, C. Coirault, E. Angelini, A.I. Barakat
- 3 *Interpretable exact linear reductions via positivity*, Computational Methods in Systems Biology, 2021  
G. Pogudin, [X. Zhang](#)

### Pre-prints

- 1 *Label-free multimodal non-linear microscopy to probe metabolism and myelin distribution in organotypic cerebellar slices*, 2024  
B. Asadipour, R. Ronzano, J. Morizet, [X. Zhang](#), A. Chessel, P. Mahou, M. Aigrot, B. Stankoff, A. Desmazieres, E. Beaurepaire, C. Stringari
- 2 *BioImageLoader: Easy handling of bioimage datasets for machine learning*, 2023  
S. Lim, [X. Zhang](#), E. Beaurepaire, A. Chessel

## Experience

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**Doctoral Researcher @ LadHyX, École Polytechnique | LTCI, Telecom Paris** Nov 2023 - Now

- Deep learning research to study dynamic cellular nuclear deformations on microgroove substrates to develop a functional in-vitro diagnostic tool for laminopathies and breast cancer.

**Deep Learning Intern @ Dassault Systemes** Mar 2023 - Sep 2023

- Deep learning research in 3D tumor segmentation. Designed and developed AI models for the TWINONCO project.

**Research Intern @ LOB, École Polytechnique** Apr 2022 - Mar 2023

- Image processing to segment axons and dendrites of mouse cerebellum images from THG microscopy. Developed segmentation tools for noisy 2D THG images and validated on 3D Imaris tracings.
- Modeled muscle fiber orientations of myosin/collagen/tubulin in zebrafish images from pSHG microscopy. Developed an algorithm to compute in-plane and out-of-plane fiber angles using structure tensors in Python. Automated Matlab code to compute anisotropy factor of different harmonophores.
- Development of Python library bioimagerloader for wrapping bioimage datasets in a unified interface for machine and deep learning applications.

**Research Intern @ LTCI, Telecom Paris** May 2022 - Jun 2022

- Deep learning on various datasets of different imaging modalities such MRI, CT, CXR etc. with different windowing settings to study the optimalities of VOI prior in full acquisition dynamics.

**Research Intern @ LIX, École Polytechnique** Sep 2020 - Apr 2021

- Created an algorithm in julia using Fourier-Motzkin elimination to improve the physical interpretability of exact linear reduction for rule-based biochemical systems

## Awards

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PhD Full Fellowship from École Polytechnique, IP Paris

Master's Scholarship from École Polytechnique, IP Paris

## Skills

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**Programming:** 🐍 Python, 🟢 Julia, 🟠 R, 🟡 Matlab, 🟣 C/C++, 🟤 Pytorch and Multi-GPU learning

**Languages:** Chinese (native), English (C2), French (B2)