



# Yongfeng Zhao

## Curriculum Vitae

### Personal information

Date of birth 7th April 1990

### Research interests

- Systems biology, the design principle of biological systems.
- Nonequilibrium statistical physics, emergence behavior of active matter from microscopic mechanism.
- Deterministic and stochastic nonlinear dynamical systems, machine learning.

### Working experience

- 2019.5–2021.4 **Postdoctoral researcher**, *Institute of Natural Sciences, Shanghai Jiao Tong University*, Shanghai.
- 2017.1–2018.12 **Postdoctoral researcher**, *Laboratoire Matière et Systèmes complexes, Université Paris Diderot*, Paris.
- 2012.11–2016.10 **PhD research**, *Department of Biochemistry, University of Hong Kong*, HK.
- 2010–2012.6 **Undergraduate research**, *Center of Quantitative Biology, Peking University*, Beijing.

### Education

- 2012–2016 **Doctor of Philosophy (PhD) in Physics**, *Department of Physics, University of Hong Kong*.
- Supervisors Prof. Jian-Dong Huang, Dr. Julien Tailleur
- Thesis *Run-and-tumble motion and differential dynamic microscopy*
- 2008–2012 **Bachelor of Science (BSc) in Physics**, *School of Physics, Peking University*.
- Supervisors Dr. Fang-Ting Li.
- Thesis *A Mathematical Model For the Decision-making Process of CD4+ T cell System By Antigen Dose*

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## Publications

(\* Authors contributed equally.)

### Published

- [1] A. I. Curatolo\*, N. Zhou\*, **Y. Zhao\***, C. Liu, A. Daerr, J. Tailleur, J. Huang, *Cooperative pattern formation in multi-component bacterial systems through reciprocal motility regulation*, Nat. Phys. (2020)
- [2] R. Zakine\*, **Y. Zhao\***, M. Knežević, A. Daerr, Y. Kafri, J. Tailleur, F. van Wijland, *Surface Tensions between Active Fluids and Solid Interfaces: bare vs dressed*, Phys. Rev. Lett. 124, 248003 (2020).
- [3] E. Woillez, **Y. Zhao**, Y. Kafri, V. Lecomte, J. Tailleur, *Activated escape of a self-propelled particle from a metastable state*, Phys. Rev. Lett. 122, 258001 (2019).
- [4] T. Bertrand, **Y. Zhao**, O. Bénichou, J. Tailleur, R. Voituriez, *Optimized diffusion of run-and-tumble particles in crowded environments*, Phys. Rev. Lett. 120, 198103 (2018).

### Submitted

- [5] C. Kurzthaler\*, **Y. Zhao\***, N. Zhou, J. Schwarz-Linek, C. Devailly, J. Arlt, J. Huang, W. C. K. Poon, T. Franosch, J. Tailleur, V. A. Martinez, *Quantitative characterization of the run-and-tumble dynamics of Escherichia coli*, submitted to Phys. Rev. Lett., (2020).
- [6] S. Yang, M. Huang, **Y. Zhao**, H. P. Zhang, *Controlling cell motion and microscale flow with polarized light field*, submitted to Phys. Rev. Lett., (2020).

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## Major collaborators

○ Dr. Julien Tailleur

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○ Dr. Adrian Daerr

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○ Prof. Frédéric van Wijland

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○ Prof. Hugues Chaté

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○ Prof. Xiaqing Shi

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- Prof. Masaki Sano  
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- Prof. Jian-Dong Huang  
School of Biomedical Science, University of Hong Kong,  
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## Working language and skills

### Language

- Chinese, native speaker.
- English, professional working.

### Skills

- Programming in C/C++, Matlab, Python.
- Parallel computing using MPI, openmp, CUDA.
- Writing and presenting in L<sup>A</sup>T<sub>E</sub>X.
- Building optical experimental setup with Arduino.