

# Curriculum Vitae

## Shangjie Yang

Universidade de São Paulo

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### Positions

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|---------------------------------|------------------------------------|
| • March 2024— Present           | Universidade de São Paulo          |
| Postdoc                         | Host: Leonardo Rolla               |
| • February 2022 — February 2024 | Bar-Ilan University                |
| Postdoc                         | Host: Gidi Amir and Naomi Feldheim |
| • November 2021 — February 2022 | Universidade Federal de Bahia      |
| Postdoc (online)                | Host: Tertuliano Franco            |
| • July 2021 — October 2021      | Bar-Ilan University                |
| Postdoc (online)                | Host: Gidi Amir                    |

### Education

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|----------------------------------|-----------------------------------------|
| • March 2017 — April 2021        | Instituto de Matemática Pura e Aplicada |
| Ph.D. student                    | Adviser: Hubert Lacoin                  |
| • March 2015 — February 2017     | Instituto de Matemática Pura e Aplicada |
| Master student                   | Adviser: Vladas Sidoravicius            |
| • September 2013 — December 2014 | Nankai University                       |
| Master student (dropout)         | Adviser: Kainan Xiang                   |
| • September 2009 — June 2013     | Sun Yat-sen University                  |
| Undergraduate student            |                                         |

### Research interest

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My research focuses on the intersection between probability theory and statistical mechanics: Markov chains and mixing times, random polymer models, interacting particle systems, random walks in random environments, Gaussian random functions.

### Publications and preprints

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8. **S. Yang**, Cutoff of the simple exclusion process with inhomogeneous conductances  
Arxiv:2409.16337
7. **S. Yang**, The spectral gap and principle eigenfunction of the random conductance model in a line segment      Arxiv:2408.07139
6. **Y. Wang, K. Xiang, S. Yang, and L. Zou** The high-order corrections of discrete harmonic measures and their correction constants  
**Journal of Statistical Physics**. Volume 191, article number 81, (2024)
5. **N. Feldheim and S. Yang**, Typical height of the (2+1)-D Solid-on-Solid surface with pinning above a wall in the delocalized phase      Arxiv:2301.09197  
**Stochastic Processes and their Applications**. 165 (2023), Pages 168-182.
4. **G. Amir and S. Yang**, The branching number of intermediate growth trees  
Arxiv:2205.14238      **Groups, Geometry, and Dynamics**. 2024.
3. **H. Lacoin and S. Yang**, Mixing time of the asymmetric simple exclusion process in a random environment      Arxiv:2102.02606  
**Annals of Applied Probability**. 34(1A): 388-427 (February 2024).
2. **H. Lacoin and S. Yang**, Metastability for expanding bubbles on a sticky substrate  
Arxiv:2007.07832  
**Annals of Applied Probability**. 32(5): 3408-3449 (October 2022).

1. **S. Yang**, Cutoff for polymer pinning dynamics in the repulsive phase Arxiv:1909.04635 *Annales de l'Institut Henri Poincaré, Probabilités et Statistiques*. 57(3): 1306-1335 (2021).

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### Teaching in São Paulo University

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1. Summer course: Análise Combinatória, Probabilidades e Aplicações (01/2025—02/2025)

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### Teaching in Universidade Federal da Bahia

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1. Minicourse: mixing time for interface models and particle system (11/2021 — 01/2022)

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### Teaching assistants at Instituto de Matemática Pura e Aplicada

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1. Probability 1 (03/2018 — 06/2018)
2. Stochastic process (the second half) (10/2019 — 11/2019)  
(The first half was given by Leandro Chiarini, 8/2019 — 9/2019)
3. Markov chains and mixing times (01/2020 — 02/2020)

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### Talks

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- Indian Institute of Technology Madras *October 2024*  
Talk: Spectral gap and cutoff of the simple exclusion process with IID conductances
- Universidade de São Paulo *September 2024*  
Talk: Spectral gap and cutoff of the simple exclusion process with IID conductances
- Beijing Normal University *September 2024*  
Talk: Spectral gap and cutoff of the simple exclusion process with IID conductances
- Universidade Federal da Bahia *June 2024*  
Talk: Metastability for expanding bubbles on a sticky substrate
- Universidade de São Paulo *April 2024*  
Talk: Mixing Time of ASEP in a random environment
- Conference: Probability and Statistical Physics *January 2024*  
Talk: Mixing Time of ASEP in a random environment
- Beijing Normal University *January 2024*  
Talk: Metastability for expanding bubbles on a sticky substrate
- Harbin Institute of Technology *December 2023*  
Talk: Metastability for expanding bubbles on a sticky substrate
- Southern University of Science and Technology (SUSTech) *November 2023*  
Talk: Metastability for expanding bubbles on a sticky substrate
- Sichuan University *November 2023*  
Talk: Cutoff for polymer pinning dynamics in the repulsive phase
- Academy of mathematics and system science *November 2023*  
Talk: Cutoff for polymer pinning dynamics in the repulsive phase
- Nankai University *November 2023*  
Talk: Cutoff for polymer pinning dynamics in the repulsive phase
- Tsinghua University *November 2023*  
Talk: Cutoff for polymer pinning dynamics in the repulsive phase
- Harbin Institute of Technology *October 2023*  
Talk: Cutoff for polymer pinning dynamics in the repulsive phase
- Weizmann: Students Probability Day IX *May 2023*  
Short talk: Typical height of the (2+1)-D Solid-on-Solid surface with pinning above a wall in the delocalized phase
- Bar-Ilan University *March 2023*  
Talk: Typical height of the (2+1)-D Solid-on-Solid surface with pinning above a wall in the delocalized phase
- Technion *March 2023*  
Talk: Typical height of the (2+1)-D Solid-on-Solid surface with pinning above a wall in the delocalized phase

- Bar-Ilan University *December 2022*  
Talk: The branching number of intermediate growth trees
- Tsinghua U.-Peking U.-BKU Webminar *September 2022*  
Talk: Mixing time of ASEP in a random environment
- Sichuan University *May 2022*  
Talk: mixing time for interface models and particle system
- Xiangtan University *May 2022*  
Talk: mixing time for interface models and particle system
- Bar-Ilan University *March 2022*  
Talk: mixing time for interface models and particle system
- Oberwolfach workshop *November 2021*  
Short talk: mixing time for ASEP in random environment
- Ningbo University *March 2021*  
Talk: metastability for expanding bubbles on a sticky substrate
- Xiangtan University *November 2020*  
Talk: metastability for expanding bubbles on a sticky substrate
- Bernoulli-IMS One World Symposium *August 2020*  
short talk: metastability for expanding bubbles on a sticky substrate
- XXIII Brazilian School of Probability *July 2019*  
poster: Cutoff for polymer pinning dynamics in the repulsive phase
- Probability Summer School Saint-Flour (France), *July 2019*  
short talk: Cutoff for polymer pinning dynamics in the repulsive phase

### Language

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Mandarin (native)   Cantonese (native)   English (fluent)   Portuguese (advance)   French (basic)

### Programming

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Mathematica   MATLAB

### Visit

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- 27 May 2024 — 7 June 2024   Universidade Federal da Bahia  
Short visit   Host: Dirk Erhard, Tertuliano Franco
  - 30 December 2023 — 13 January 2024   Academy of Mathematics and Systems Science  
Short visit   Host: Quan Shi
  - 11 December 2023 — 29 December 2023   Bimsa  
Short visit   Host: Yuval Peres
  - 02 December 2023 — 10 December 2023   Tsinghua University & Peking University  
Short visit   Host: Chenlin Gu, Xinyi Li
  - 29 November 2023 — 2 December 2023   Southern University of Science and Technology  
Short visit   Host: Jieliang Hong, Raúl Ures
  - 8 November 2023 — 15 November 2023   Sichuan University  
Short visit   Host: Yinshan Chang
  - 2 November 2023 — 7 November 2023   Academy of Mathematics and Systems Science  
Short visit   Host: Hui Xiao
  - 27 October 2023 — 1 November 2023   Harbin Institute of Technology  
Short visit   Host: Jinghao Huang
  - May 2021 — February 2022   Instituto de Matemática Pura e Aplicada  
Visiting fellow   Host: Hubert Lacoin

### Referee for journals

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Annals of Applied Probability  
Communications in Mathematical Physics

Annals of Probability  
Electronic Journal of Probability

**Award**

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Colman-Soref scholarship2023, Israel

**Miscellanies**

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2018 ICM Volunteer (Rio de Janeiro)