

# Boyuan Zhao

Dec 2024

## PERSONAL INFO

---

NAME: Boyuan Zhao  
ADDRESS: Mathematical Institute, North Haugh, St Andrews, UK KY16 9SS  
PHONE: +44 7514180075, +86 18910504316  
EMAIL: [bz29@st-andrews.ac.uk](mailto:bz29@st-andrews.ac.uk)  
NATIONALITY: China  
[PERSONAL WEBPAGE](#)

## EDUCATION

---

Since 10/2021	PHD IN MATHEMATICS, University of St Andrews, Supervised by <a href="#">Mike Todd</a> and <a href="#">Kenneth Falconer</a>
09/2020–08/2021 Distinction (GPA 17.3/20)	MSc Mathematics University of St Andrews Dissertation: On rotation number and unique minimal sets of circle homeomorphisms. Advisor: Mike Todd
09/2017–08/2020 First Class Honours	BSc Mathematics with Modern Languages University College London

## RESEARCH INTERESTS

---

I am interested in multiple topics in ergodic theory and dynamical systems, more precisely,

- Countable Markov shifts and Strongly positive recurrence
- Dynamical Borel-Cantelli lemmas and one-dimensional dynamics
- Extreme Value Theory, Recurrence events

## RESEARCH OUTPUT

---

1. B. Zhao, *Almost sure convergence of cover times for  $\psi$ -mixing systems*. (2024) preprint, [ARXIV: 2412.17425](#).
2. M. Todd and B. Zhao, *Countable Markov Chain with Exponential Mixing*. (2024), preprint, [ARXIV.2403.02092](#)
3. B. Zhao, *Closest distance between iterates of typical points*. Discrete Contin. Dyn. Syst. 44(8), (2024) 2252-2279. [PDF](#)

## SCHOLARSHIP AND FUNDINGS

---

10/2021-10/2025 China Scholarship Council Programme

## CONFERENCES ATTENDED AND PRESENTATIONS

---

Jul 2024	Workshop on Dynamical Systems: Geometric and Statistical Properties University of Warwick
Jun 2024	British Mathematical Colloquium talk title: Countable Markov shifts with exponential mixing University of Manchester
Dec/2023	Workshop on Probabilistic Methods in Dynamics talk title: Maximal length of subsequence matching and Renyi entropy Universidade do Porto
May/2023	Thermodynamic Formalism: Non-additive Aspects and Related Topics IMPAN, Bedlewo.
Sep/2022	Ergodic Theory and Fractal Geometry Conference University of Birmingham
04/2022	University of St Andrews Analysis Group Seminar Talk Title: Minimal distance between orbits
03/2022	Junior Ergodic Theory Seminar ICMS, Edinburgh

## OTHER INTERESTS AND SKILLS

---

Track and cross country athlete, competing in Scottish Student Sport and BUCS.  
Fluent Spanish at B2 level and Portuguese at B1.  
Irish & Scottish folk musician.