# Haritha Cheriyath

*University of Chile*

✉ *hcheriyath@cmm.uchile.cl*
✉ *harithacheriyath@gmail.com*

## Education and Research Experiences

**2023 -present**   **Postdoctoral Fellow**, Center for Mathematical Modeling, University of Chile, Santiago, Chile

**2021–2023**   **Visiting Fellow**, Tata Institute of Fundamental Research, Mumbai, India

**2017–2021**   **Ph.D. in Mathematics**, Indian Institute of Science Education and Research (IISER) Bhopal, Bhopal, India
- Thesis Title: *Shift spaces with a hole - Properties and Applications*
- Supervisor: Dr. Nikita Agarwal

**2012–2017**   **BS-MS Dual Degree Program; Major in Mathematics and minor in Physics**, IISER Bhopal, Bhopal, India.
- Thesis Title: *Open dynamical systems*
- Supervisor: Dr. Nikita Agarwal

## Research Interests

Ergodic theory and dynamical systems. *Specific interests are:*
- Symbolic dynamics
- Open dynamics
- Topological Dynamics

## Publications and Preprints

- Asymptoticity, automorphism groups and strong orbit equivalence class (with Sebastián Donoso), *Arxiv preprint, arXiv:2504.03533,* 2025
- On Escape rate for subshift with Markov measure (with Nikita Agarwal and Sharvari Neetin Tikekar), *Arxiv preprint, arXiv:2401.05118,* 2024
- On the Perron root and eigenvectors of a non-negative integer matrix (with Nikita Agarwal and Sharvari Neetin Tikekar), *Linear Algebra Appl.,* 2024
- Subshifts of finite type with a hole (with Nikita Agarwal), *J. Aust. Math. Soc.,* 2023
- On the Perron root and eigenvectors associated with a subshift of finite type (with Nikita Agarwal), *Linear Algebra Appl.,* 2022

- Product of expansive Markov maps with hole (with Nikita Agarwal), *Discrete Contin. Dyn. Syst.*, 2019

## Awards and Academic Achievements

- Awarded with Fondecyt postdoctoral program, 2025
- Awarded with NBHM postdoctoral fellowship, 2023
- Awarded with Proficiency Medal, Mathematics, for securing the highest CPI (9.47 on a 10 point scale) during the BS-MS Dual Degree Program, IISER Bhopal in June 2017
- Qualified GATE held in February 2017
- Qualified CSIR-NET held in December 2016 with all India rank 17
- Awarded with the INSPIRE Scholarship, funded by DST, Government of India, from 2012 to 2017

## Contributed and Invited Talks

- Dynamical Systems Seminar 2025, Santiago (*invited*)
  Title: *Open dynamics on subshifts of finite type*
- Seminar 2025, TIFRCAM Bangalore (*invited*)
  Title: *Strong orbit equivalence and automorphism group of minimal Cantor systems*
- Departmental Seminar 2025, IISER Bhopal (*invited*)
  Title: *Some dynamical invariants under strong orbit equivalence*
- Dyadisc 7: Brazilian, Chilean and French Interplay for Symbolic Dynamics 2024, Valparaiso (*invited*)
  Title: *Automorphism groups, Asymptoticity and Strong Orbit equivalence*
- Conference on 'Women in Dynamical Systems & Ergodic Theory' 2024, Scuola Normale Superiore
  Title: *Entropy drop for perturbations of subshifts of finite type*
- SIPo - Seminario de Investigadores Postdoctorales 2024, Center for Mathematical modeling
  Title: *An Enumeration problem in Symbolic dynamics*
- Combinatorics Seminar 2023, IIT Bombay (*invited*)
  Title: *Enumeration of subwords on sequences and its applications*
- Celebration of the International Women in Mathematics Day 2023, IISER Bhopal (*invited*)
  Title: *The Perron root and eigenvectors of a non-negative integer matrix*
- Mathematics colloquium 2023, TIFR Mumbai
  Title: *Enumeration of subwords on sequences and its applications*
- Online ergodic theory seminar in Korea, 2023 (*invited*)
  Title: *Open dynamics on subshifts of finite type*

- Geometry and Topology Seminar 2023, IISER Bhopal (*invited*)
  Title: *Enumeration of subwords on sequences and its applications*
- BRICS Maths Conference 2021, IISER Thiruvananthapuram
  Title: *Perron-Frobenius theorem for a subshift of finite type*
- Ergodic Theory and Dynamical Systems Seminar 2021, TIFR Mumbai
  Title: *Subshifts of finite type with a hole: Properties and Applications*
- Inter IISER-NISER Mathematics Meet 2021 (virtual)
  Title: *A method for computing the Perron root and eigenvectors associated with a subshift of finite type*
- Seminars on Geometry and Topology 2021 (virtual) (*invited*)
  Title: *Subshifts of finite type with a hole: Properties and Applications*
- In-House Symposium 2021, IISER Bhopal
  Title: *The Perron root and eigenvectors of a subshift of finite type*
- Virtual Math Fest 2020 (virtual) (*invited*)
  Title: *An alternate definition of the Parry measure using combinatorics*
- In-House Symposium 2020, IISER Bhopal
  Title: *Dynamics on shift spaces with a hole*
- In-House Symposium 2019, IISER Bhopal
  Title: *Shift space dynamics with a hole*

## Workshops, Conferences and Schools Attended

Dec 2024 **Dyadisc 7: Brazilian, Chilean and French Interplay for Symbolic Dynamics**, *Valparaiso*

Aug 2024 **NU Trends in Ergodic Theory**, *Northwestern University, Chicago*

May 2024 **Women in Dynamical Systems & Ergodic Theory**, *Scuola Normale Superiore, Pisa*

Dec 2022 **IWM Annual Conference**, *IISER Pune, Pune*

Dec 2022 **Ergodic Theory and Dynamical Systems**, *ICTS Bangalore*

July 2022 **Seminar on Group Actions, Geometry and Dynamics**, *Ohalo, Israel*

July 2022 **Dynamical week in Jerusalem**, *Hebrew University Jerusalem, Israel*

March 2022 **Current Outlook on Geometry, Ergodic Theory and Number Theory (COGENT)**, *TIFR Mumbai*

Dec 2021 **BRICS Maths Conference 2021**, *IISER Thiruvananthapuram*

June 2021 **Expanding Dynamics - Creative Online Ventures in Dynamics**, *Online*

Sep 2019 **ICTS program on "Smooth and Homogeneous Dynamics"**, *ICTS Bangalore*

| March 2019 | **ICTS program on "Probabilistic Methods in Negative Curvature"**, *International Centre for Theoretical Sciences (ICTS) Bangalore* |
| Dec 2018 | **International Workshop and Conference on Topology and Applications**, *Rajagiri School of Engineering & Technology, Kochi* |
| June 2018 | **IWM Annual Conference**, *Shiv Nadar University, Noida* |
| Dec 2017 | **Advanced Instructional Schools (AIS) on "Ergodic theory and Dynamical systems"**, *Indian Institute of Technology (IIT) Delhi* |

## Teaching Experiences

| Jan 2025 | **Instructor**, Overture camp in Goa, organized by Mathematics Training and Talent Search trust (MTTS), Goa |
| Aug 2023 | **Mentor**, Online Foundation Course in Mathematics, organized by MTTS, virtual |
| May 2023 | **Mentor**, Summer camp, Organized by MTTS, IIT Mandi |
| July 2022 | **Tutor (Analysis)**, The Vigyan Vidushi Program in Mathematics, TIFR Mumbai |
| Sep 2021 | **Mentor**, Online Foundation Course in Mathematics, organized by MTTS, virtual |
| Fall 2020 | **Teaching Assistant**, Groups and Symmetry, IISER Bhopal |
| Spring 2020 | **Teaching Assistant**, Linear Algebra, IISER Bhopal |
| Fall 2019 | **Teaching Assistant**, Calculus on one variable, IISER Bhopal |
| Spring 2019 | **Teaching Assistant**, Probability and Statistics, IISER Bhopal |
| Fall 2018 | **Teaching Assistant**, Calculus on one variable, IISER Bhopal |

## Administration and Service

| 2024-present | **Organizer and Cofounder**, SIPo - Seminario de Investigadores Postdoctorales, Center for Mathematical Modeling |
| 2022-present | **Volunteer**, A 'Self Assessments' project conducted by MTTS |
| Dec 2020 | **Volunteer**, Indian School of Logic and its Applications, virtual |
| March 2019 | **Organizer**, International day of Mathematics celebration, IISER Bhopal |
| Spring 2019 | **Organizer**, Weekly student seminar, IISER Bhopal |
| 2018- 2019 | **Ph.D. Senate Representative**, IISER Bhopal |
| Jan 2018 | **Volunteer**, Science Academies' Lecture Workshop on "Geometry and Topology", IISER Bhopal |
| 2017- 2018 | **Member**, Representative Council, IISER Bhopal |
| Oct 2017 | **Volunteer**, IWM: Regional Workshop on Research and Opportunities, IISER Bhopal |