CURRICULUM VITAE

NICANOR CARRASCO-VARGAS

General Information

- **Name:** Nicanor Carrasco-Vargas
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- **Academic website:** https://nicanorcarrascovargas.github.io/
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- **Availability:** From Autumn 2026 (flexible).
- **Research interests:** Ergodic theory, dynamical systems, symbolic dynamics, computability in dynamical systems, slow entropy, sequence entropy, cocycles.

Education

- **Postdoctoral researcher.** Jagiellonian University, Poland (Uniwersytet Jagielloński). September 2024 - present. With Adam Kanigowski.
- **PhD in Mathematics.** Pontifical Catholic University of Chile, Chile (Pontificia Universidad Católica de Chile). March 2020 - September 2024. With Cristóbal Rojas and Sebastián Barbieri.

Publications

[1] N. Carrasco-Vargas. Translation-like actions by $\mathbb{Z}$, the subgroup membership problem, and Medvedev degrees of effective subshifts. *Groups, Geometry, and Dynamics*, 2024.
Url: https://doi.org/10.4171/ggd/817.

[2] S. Barbieri, N. Carrasco-Vargas, and C. Rojas. Effective dynamical systems beyond dimension zero and factors of SFTs. *Ergodic Theory and Dynamical Systems*, 45(5):1329–1369, 2025.
Url: https://doi.org/10.1017/etds.2024.79.

[3] N. Carrasco-Vargas. On a Rice theorem for dynamical properties of SFTs on groups. *Archiv der Mathematik*, 124:591–603, 2025.
Url: https://doi.org/10.1007/s00013-025-02125-x.

[4] N. Carrasco-Vargas. Infinite Eulerian paths are computable on graphs with vertices of infinite degree. *Computability*. (to appear).
Url: https://arxiv.org/abs/2303.14820.

Submitted work

[1] N. Carrasco-Vargas, B. H. de Menibus, and R. Pallen. Parametrized complexity of relations between multidimensional subshifts, 2025.
Url: https://arxiv.org/abs/2509.24343.

[2] N. Carrasco-Vargas. Topological slow entropy, sequence entropy, and generalized $[T, T^{-1}]$ systems, 2025.
Url: https://arxiv.org/abs/2506.17932.
[3] S. Barbieri, N. Carrasco-Vargas, and P. Rivera-Burgos. The automorphism group of a strongly irreducible subshift on a group, 2025.
Url: https://arxiv.org/abs/2501.14463.
[4] N. Carrasco-Vargas, V. D. Rose, and C. Rojas. On the complexity of the Eulerian path problem for infinite graphs, 2024.
Url: https://arxiv.org/abs/2409.03113.
[5] S. Barbieri and N. Carrasco-Vargas. Medvedev degrees of subshifts on groups, 2024.
Url: https://arxiv.org/abs/2406.12777.

Talks

[1] Topological slow entropy of some skew products, Oct. 2025. Talk for Budapest-Vienna seminar.
[2] Questions about ranges of RW, Sept. 2025. Lightning talk at YMCN autumn school: Probability and dynamics on groups 22–26 September 2025, Münster, Germany.
[3] Topological slow entropy of some skew products, Aug. 2025. Talk for Recurrent ETDS seminar,
https://sites.google.com/view/recurrentetds/home.
[4] Automorphism groups of subshifts, Apr. 2025. Talk for dynamics seminar, Jagiellonian University.
[5] Medvedev degrees of subshifts, 2024. Talk for dynamics seminar, Jagiellonian University.
[6] Tilings of the plane: aperiodicity, undecidability, and a Rice theorem, 2024. Talk for post-graduate school UFRO - Lican Ray.
[7] Tilings of the plane: aperiodicity, undecidability, and a Rice theorem, May 2024. Talk for CENIA seminar.
[8] A recursion-theoretic invariant for subshifts, Feb. 2024. Talk for thematic month at CIRM, France: Discrete Mathematics & Computer Science: Groups, Dynamics, Complexity, Words.
https://conferences.cirm-math.fr/3007.html.
[9] Are all dynamical properties of $\mathbb{Z}^2$-SFTs undecidable?, Feb. 2024. Poster for thematic month at CIRM, France: Discrete Mathematics & Computer Science: Groups, Dynamics, Complexity, Words.
https://conferences.cirm-math.fr/3007.html.
[10] Un invariante para subshifts de naturaleza recursiva, Sept. 2023. Seminario de Sistemas Dinámicos de Santiago, Santiago, Chile.
http://www.dynamicalsystems.cl/?page_id=286.
[11] Medvedev degrees of effective subshifts on groups, Mar. 2023. Journées annuelles SDA2, Toulouse, France.
https://indico.math.cnrs.fr/event/9357/.
[12] Medvedev degrees and subshifts, July 2023. 16th International Conference on Computability, Complexity and Randomness. Kochel, Germany.
http://cca-net.de/ccr2023/.
[13] Un invariante para subshifts de naturaleza recursiva, Dec. 2023. Encuentro sociedad matemática de chile 2023, Santiago, Chile.
https://sites.google.com/uchile.cl/somachi2023/inicio.