



Oriol Roca-Martín

PHD CANDIDATE - COGNITIVE SCIENCE AND LANGUAGE PROGRAM

Metaphysics of Complex Systems and Computation · Computational Approaches to Scientific Realism

LOGOS BIAP Department of Philosophy, Universitat de Barcelona

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Education

Universitat de Barcelona

Barcelona, Catalonia, Spain

PHD IN PHILOSOPHY OF SCIENCE

2022 - present

- Topic: The Real Patterns Ontic Structuralist approach to Emergence
- Advisor: Manolo Martínez and José Díez

MA COGNITIVE SCIENCE AND LANGUAGE

2019 - 2022

- 9/10 master thesis. Topic: Debates on the explanatory nature of natural selection
- Advisors: Sergio Balari and Jose Díez

Universitat Autònoma de Barcelona

Bellaterra, Catalonia, Spain

BA PHILOSOPHY

2014 - 2018

- Minor in Language Sciences
- 10/10 undergrad thesis. Topic: An analysis of Kripke's inconceivability argument against identity theorists
- Advisor: Olga Fernández Prat

Universitat Pompeu Fabra

Barcelona, Catalonia, Spain

BE MATHEMATICAL ENGINEERING IN DATA SCIENCE

2023 - Currently Paused

Professional Experience

2023 -
present

FPI - Maria de Maeztu PhD Fellowship, (CEX2021-001169-M-20-1), LOGOS BIAP, Universitat de Barcelona

2020 - 2021

Beca Col·laboració. Undergraduate Internship in departmental web science communication, Philosophy Department, Universitat de Barcelona

2019 - 2020

Beca Col·laboració. Undergraduate Internship in editorial tasks for "enraHonar" departmental journal, Philosophy Department, Universitat Autònoma de Barcelona

2018

Undergraduate Internship at the CSIC-III A (Governmental AI Research Institute), Universitat Autònoma de Barcelona and CSIC-III A

Publications

PUBLISHED

Roca-Martín, O., Costa, V., Dellunde P., and Falomir, Z. (2021). Innovative perspectives in the design of intelligent artwork classification algorithms: tools for better human-machine integration. UABDivulga Online Journal.

Abstract: The present research explores an innovative perspective in the design of algorithms capable of classifying paintings according to their artistic style. Avoiding some drawbacks of human-machine integration that machine learning design presents, ℓ-SHE is an algorithm based on logical representation systems and qualitative concepts that, in addition to successfully recognize and classify the artistic style of a painting, works with semantic information, generates explanations of the reasons for its results, and can be trained easily and with relatively small datasets.

ALMOST READY TO GO

Roca-Martín, O. (Manuscript). An Overlooked Challenge for Real Patterns Ontic Structural Realism—Separating Local from Global Indispensability Demands

Roca-Martín, O. (Manuscript). The “emergent multi-scale causality” framework for modelling complex systems inherits an Overlooked challenge from Ontic Structural Realism

Roca-Martín, O. and Martínez, M. (Manuscript). What can Multiple Realizability possibly be? A Complexity and Real Patterns approach

Roca-Martín, O. (Manuscript). Can Real Patterns Ontic Structural Realism Dispense with the “Natural/Non-Natural” Kinds distinction? Hollow Metaphysics Based on Scale Stability

González-Arias L. and Roca-Martín, O. (Manuscript). “Hyperkinds” and The Role of Coarse-Graining in the Methodological Basis of Comparative Cognitive Science

Awards, Fellowships, & Grants

2023 **FPI PhD Fellowship**, Ministerio de Ciencia, Innovación y Universidades

2021 **Graduate Internship Grant, Beca Col·laboració**, Universitat de Barcelona

2019 **Graduate Internship Grant, Beca Col·laboració**, Universitat Autònoma de Barcelona

Presentations

González-Arias, L., and Roca-Martín, O. “Hyperkinds” and Episodic Memory in Honey Bees—the Role of Coarse-Graining in the Methodological Basis of Comparative Cognitive Sciences; Atypical Cases of Memory: From Minimal Agents to Human Development, Centre for Philosophy of Memory and MaCI, Grenoble 12th May 2026.

Roca-Martín, O. What Can Multiple Realizability Possibly Be? A Complexity and Real Patterns Approach; (Invited Talk) BIAP workshop on the Philosophy of Cognitive Science, Barcelona, 12th November 2025.

Roca-Martín, O. Scientific Abstraction: Insight Through Omission; BIAP Research Festival, UPF, Barcelona, 13th October 2025.

Roca-Martín, O. (An Exploratory attempt at) Landing Pattern Metaphysics. Can Daniel Dennett’s Real Patterns Be More than Just a Mere Heuristic?; Donosti International Ontology Congress, UPV/EHU, Basque Country, 9th October 2025.

Thompson, W., Rowan, C. and Roca-Martín, O., “Coarse-graining”: Philosophical implications and examples from engineering and physics; Tutorials for other attendants of the Complex Systems Summer School, 16th June 2025.

Roca-Martín, O., Chen, Y., Díaz, A., Raj, A., and Rowan, C. A User’s Guide to Computational Mechanics: Discovering Laws from Time Series Data; Complex Systems Summer School Closing Conference, Santa Fe Institute, 3rd July 2025.

González-Arias, L. and Roca-Martín, O., “Hyperkinds” and the Role of Coarse-Graining in the Methodological Basis of Comparative Cognitive Sciences”; ISPSM Annual Conference 2024 (International Society for the Philosophy of the Sciences of the Mind), Online, 25th October 2024.

Roca-Martín, O., and Martínez, M., Real Pattern and Multiple Realizability; LOGOS Seminar Talks, Universitat de Barcelona, 21st February 2024.

Roca-Martín, O., Can Flat-Physicalism Be Particularly “Non-Mysterious” and “Flat”?—Some New Metaphysical Questions Regarding Usefulness in Alleged Multiple Realizable Regularities; I FICIRE Conference, U. de Santiago de Compostela, 22nd January 2024.

Roca-Martín, O., Can Flat-Physicalism Be Particularly “Non-Mysterious” and “Flat”?; LOGOS GRG Graduate Seminar), Universitat de Barcelona, 23rd November 2023.

Teaching Experience

Spring 2026	Metaphysics II (Topic: Metaphysics of Science), BA Philosophy , Teaching Assistant	<i>Universitat de Barcelona</i>
Spring 2025	Philosophical Problems III (Topic: Metaphysics), BA Philosophy , Teaching Assistant	<i>Universitat de Barcelona</i>
Spring 2025	An Homage to Dennett's Philosophy. GAUDIR-UB extra etcs 20h course , Main Lecturer	<i>Universitat de Barcelona</i>

Mobility

Jan + Feb 2026	Research Visit to James Ladyman , 6 weeks, Centre for Science and Philosophy, Philosophy Department, University of Bristol, UK
January 2026	CSSS Alumni-Complex Systems Writing Retreat , 1 week, Beachly House, Chepstow, Wales, UK
June 2025	Complex Systems Summer School , 5 weeks, Santa Fe Institute, New Mexico, US

Outreach, Administrative Tasks, & Others

January 2026	Co-organizer: CSSS Alumni-Complex Systems Writing Retreat , Beachly House, Chepstow, Wales, UK
May 2025	Co-organizer: LOGOS Barcelona Mental Content Workshop , Universitat de Barcelona
April 2025 - Ongoing	Research Student Representative , Philosophy Department, Universitat de Barcelona
2024 - 2025	LOGOS Barcelona Gender Action, Student Member , a local researchers group in the spirit of SWIP Analytic
2023	CCiL Master Annual Closing Workshop , Information Session on Predoctoral grants and PhD program