

Nicolás García

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Citizenship: Canada, Colombia

Research interests Stochastic Analysis, Mean Field Games, and their applications in finance and economics.

Education

Princeton University Princeton, NJ
PhD Program in Operations Research & Financial Engineering. 2021 -
Coursework in stochastic calculus, probability theory, statistics, and optimization.

Queen's University Kingston, ON
MSc in Mathematics. 2018 - 2020
Advisors: Dr. Serdar Yüksel, Dr. Christoph Kawan.
Coursework in probability theory, real and functional analysis, and control theory.

Queen's University Kingston, ON
BSc in Mathematics & Engineering. 2012 - 2017
Computing and Communications Concentration.

Publications

Ergodicity of Controlled Stochastic Nonlinear Systems under Information Constraints: Refined Bounds via Splitting
Nicolas Garcia, Christoph Kawan, Serdar Yüksel.
Accepted at 2021 Conference on Decision and Control.

Ergodicity Conditions for Controlled Stochastic Nonlinear Systems under Information Constraints: A Volume Growth Approach
Nicolas Garcia, Christoph Kawan, Serdar Yüksel.
SIAM J. Control Optim., 59(1), 534–560.

Ergodicity Conditions for Controlled Stochastic Nonlinear Systems under Information Constraints
Nicolas Garcia, Christoph Kawan, Serdar Yüksel.
24th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2020): Cambridge, UK

Honors and Scholarships

Frank E. Smith Fellowship (Queen's University) 2019
Queen's Graduate Award (Queen's University) 2018
Dean's Scholar Distinction (Queen's University) 2017

	Entrance Scholarship (Queen's University)	2012
Research Projects	A Decentralized Approach to Optimizing the Energy Grid Capstone undergraduate group project studying the application of a multi-agent version of the Q-learning algorithm to determine optimal electricity consumption policies for agents in a smart grid.	
Talks	Ergodicity of Controlled Stochastic Nonlinear Systems under Information Constraints: Refined Bounds Via Splitting 2021 Conference on Decision and Control	12/2021
	Ergodicity and Asymptotic Stationarity of Controlled Stochastic Nonlinear Systems under Information Constraints Online Seminar on Control and Information	04/2021
	A Conditional Entropy Inequality Using Stochastic Realization and a Refined Data-Rate Theorem in Networked Control Queen's Stochastic Control Seminar	10/2020
	Ergodicity of Controlled Stochastic Dynamical Systems Under Information Constraints Queen's Stochastic Control Seminar	10/2019
	Stabilization of a Discrete LTI System Under Fixed Rate Information Constraints Queen's Stochastic Control Seminar	10/2018
Teaching experience	Teaching assistant (Queen's University) MATH 212: Linear Algebra II (Winter 2019) Prepared and led tutorials for a linear algebra course for second year mathematics and engineering majors. MATH 121: Calculus I (Fall 2018, 2019) Led tutorials for first year calculus students.	2018-2020
Leadership	Vice President - Queen's Graduate Math Society	2018/19 Academic Year
Industry experience	First Republic Bank Quantitative Research Working (as part of the Princeton ORFE - First Republic Bank collaboration) with the FRB analytics team to apply quantitative methods to various business problems.	Princeton, NJ 05/2022 - present
	Westhoff Engineering Resources Junior engineer	Calgary, AB 01/2018 - 08/2018

Worked for eight months at a land and water resource management consulting firm. Also held summer intern positions in 2017 and 2016.

Skills

Programming

Proficient in: Python, C#, Matlab, Latex.

Languages

English (fluent), Spanish (fluent).
