Giulia Pucci

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EDUCATION

KTH - Royal Institute of Technology — **09 2022 – current**
PhD Student - Department of Mathematics - Division of Mathematical Statistics. — *Stockholm, Sweden*

- Supervisor: Prof. Nacira Agram

Sapienza University of Rome — **09 2020 – 07 2022**
Master of Science - Final Grade : ***110/110 with honors*** — *Rome, Italy*

- Thesis in Control Theory: "Optimal strategies for a debt management problem." Supervisor: Prof. Graziano Crasta

Sapienza University of Rome — **09 2017 – 07 2020**
Bachelor of Science - Final Grade : ***110/110 with honors*** — *Rome, Italy*

- Thesis: "Calculus of Variations: an application to the protein structure." Supervisor: Prof. Annalisa Malusa
- **Erasmus exchange program** at Stockholm University during the first semester of the academic year 2019-2020

PUBLICATIONS

- Agram, N., Benth, F.E., & Pucci, G. (2025) **Installation of Renewable Capacities to Meet Energy Demand and Emission Constraints under Uncertainty** IMA Journal of Management Mathematics
- Agram, N., Pucci, G., & Øksendal, B. (2024) **Impulse Control of Conditional McKean–Vlasov Jump Diffusions** Journal of Optimization Theory and Applications, 200(3), 1100–1130

PREPRINTS

- Agram, N., Benth, F.E., Pucci, G., & Rems, J. (2025) **A Deep Learning Approach to Renewable Capacity Installation under Jump Uncertainty** arXiv:2503.00880
- Agram, N., & Pucci, G. (2025) **Deep BSVIEs Parametrization and Learning-Based Applications** arXiv:2507.01948
- Agram, N., Arharas, I., Pucci, G., & Rems, J. (2025) **Deep Learning for Energy Market Contracts: Dynkin Game with Doubly RBSDEs** arXiv:2503.00880
- Gozzi, F., Leocata, M., & Pucci, G. (2024) **Network-Based Optimal Control of Pollution Growth** arXiv:2406.15338

ONGOING PROJECTS

- Agram, N., Ardjani, H., & Pucci, G., **Deep BSVIEs with jumps: Parametrization and Learning-Based Applications**
- Agram, N., & Pucci, G., **A Coupled Dynkin Game Model with Investment and Volume Allocation in Energy Markets**

RESEARCH VISITS

- University of Oslo — Dec 2025, Oslo, Norway
  Collaborated with Prof. Bernt Øksendal.
- Luiss Guido Carli University — Mar 2025, Rome, Italy
  Collaborated with Prof. Fausto Gozzi on Optimal Control for Environmental Systems.
- Luiss Guido Carli University — Aug 2023 – Dec 2023 Rome, Italy
  Collaborated with Prof. Fausto Gozzi on Optimal Control for Environmental Systems.
- University of Oslo — Jun 2023, Oslo, Norway
  Collaborated with Prof. Bernt Øksendal and Prof. Fred Espen Benth on Stochastic Control and Energy Modeling.

INVITED TALKS AND SEMINARS

- **IVC2025 Viennese Conference on Optimal Control and Dynamic Games**, TU Wien, Austria — *Jun 15-18, 2025*
  Presentation: **Network-Based Optimal Control of Pollution Growth**
- **Talk at Luiss Guido Carli University**, Rome, Italy — *Mar 26, 2025*
  Presentation: **Deep Learning for Energy Market Contracts: Dynkin Game with Doubly RBSDEs**
- **Stochastics in Mathematical Finance and Physics Conference**, Hammamet, Tunisia — *Oct 21–25, 2024*
  Presentation: **Installation of Renewable Capacities to Meet Emission Targets and Demand under Uncertainty**
- **Conference on Stochastic Analysis with Applications to Finance, Energy and Insurance**, Algeria *Mar 6, 2024*
  Presentation: **Stochastic Modeling in the Energy Sector**
- **Workshop on S(P)DEs: Numerics and Applications**, Linnaeus University, Växjö, Sweden — *Dec 6–8, 2023*
  Presentation: **Impulse Control of Conditional McKean–Vlasov Jump Diffusions**

TALKS

* **Talk at Uppsala University**, Uppsala, Sweden *Nov 4, 2025*
  Presentation: **Deep Learning for Energy Market Contracts: Dynkin Game with Doubly RBSDEs**
* **Mathematical Statistics weekly seminars, KTH** *Oct 28, 2025*
  Presentation: **Deep Learning for Energy Market Contracts: Dynkin Game with Doubly RBSDEs**
* **12th General AMaMeF Conference**, Verona, Italy *Jun 23–27, 2025*
  - *Presentation:* **Deep Learning for Energy Market Contracts: Dynkin Game with Doubly RBSDEs**
  - *Presentation:* **Deep BSVIEs Parametrization and Learning-Based Applications**
* **Insurance Data Science Conference**, Stockholm University, Sweden *Jun 17–18, 2024*
  Presentation: **Network-Based Optimal Control of Pollution Growth**

POSTER PRESENTATIONS

* **Machine Learning and Optimal Control Summer School**, Gaeta, Italy May 27–31, 2024
* **Summer School in Financial Mathematics - "Mathematics of FinTech"**, TU Delft, Netherlands Sep 4–8, 2023

ATTENDANCE

* **Conference: Stochastic Control and Games for Risk and Regulation**, Hammamet, Tunisia Oct 28–31, 2024
* **Conference: Mathematical Approaches to Climate Change and its Impacts**, Pisa, Italy Apr 22–23, 2024
* **Workshop: Mean Field Games in Economics 2023**, Luiss University, Rome, Italy Nov 9–10, 2023
* **Workshop on Stochastic Control Theory**, KTH Royal Institute of Technology, Stockholm, Sweden Oct 25–26, 2023
* Linnaeus–Maghreb **Workshop in Stochastic Analysis**, Linnaeus University, Växjö, Sweden Nov 16, 2022
* **Conference in Memory of Tomas Björk**, Swedish House of Finance, Stockholm, Sweden Oct 10–11, 2022

TEACHING AND SUPERVISION

Teaching Assistant
SF2975 Financial Derivatives 7.5 credits *Autumn 2024, Autumn 2025*

Teaching Assistant
SF2701 Financial Mathematics, Basic Course 7.5 credits *Spring 2023, Spring 2024, Spring 2025*

Bachelor's Thesis Supervision
SF100X Degree Project in Applied Mathematics (Mathematical Statistics) *Spring 2025*

Master's Thesis Supervision
SF291X Degree Project in Financial Mathematics, Second Cycle (60528) *Spring 2024*

Teaching Assistant
SF2930 Regression Analysis 7.5 credits *Spring 2024*

Bachelor's Thesis Supervision
SF100X Degree Project in Applied Mathematics (Regression Analysis) *Spring 2023*

PHD COURSES

KTH Royal Institute of Technology

- Computational Methods for Stochastic Differential Equations - Prof. Anders Szepessy
- Optimal Stochastic Control and Backward Stochastic Differential Equations - Prof. Boualem Djehiche
- Geometric Deep Learning - Prof. Joakim Andén
- Probability - Prof. Nacira Agram
- Optimization in Finance - Prof. Nacira Agram
- Numerical Linear Algebra - Prof. Elias Jarlebring
- Mathematical Systems Theory - Prof. Xiaoming Hu
- Convexity and Optimization in Linear Spaces - Prof. Johan Karlsson

ML&OC24: Machine Learning and Optimal Control, Gaeta

- Deep (reinforcement) learning methods for stochastic control PDEs - Prof. Huyen Pham
- Control and Machine Learning - Prof. Enrique Zuazua
- High-dimensional (optimal) feedback control with neural networks - Lars Grüne

European Summer School in Financial Mathematics, TU Delft

- Blockchains and Decentralized Insurance - Prof. Hansjörg Albrecher
- Introduction to Differential Privacy - Prof. Martin Kroll
- Machine Learning for Anti-Money Laundering and Deep Portfolio Optimisation in Finance - Prof. Kees Oosterlee
- Artificial Intelligence and Deep Reinforcement Learning in Finance - Prof. Jörg Osterrieder