

Lorenzo SFORNI

PERSONAL DETAILS

AFFILIATION: Department of Electrical, Electronic and Information Engineering
“G. Marconi”, Alma Mater Studiorum Università di Bologna, viale del
Risorgimento 2, 40136, Bologna, Italy
EMAIL: lorenzo.sforni@unibo.it

CURRENT POSITION

1 NOV 2020 – current | Ph.D. Candidate in Systems and Control Engineering
Department of Electrical, Electronic and Information Engineering
“G. Marconi”, Alma Mater Studiorum Università di Bologna, Italy

EDUCATION

9 OCT 2020 | Master degree in AUTOMATION ENGINEERING (LM-25), Alma Mater
Studiorum Università di Bologna, Italy
110/110 cum laude, GPA: 30.0/30.0
Advisor: G. Notarstefano
Thesis: A closed-loop methodology for discrete-time nonlinear optimal
control.

26 JUL 2018 | Bachelor degree in AUTOMATION ENGINEERING (L-8), Alma Mater
Studiorum Università di Bologna, Italy
110/110 cum laude
Advisor: A. Zucchelli
Thesis: Development of a nanofiber piezoelectric sensor for composite
structures.

POSITIONS HELD

1 MAR 2023 – 4 SEP 2023 | Visiting Researcher at California Institute of Technology (Pasadena,
CA, USA)
Advisor: A.D. Ames
Project: Development of optimal-control-based safe controllers for
robotic systems.

RESEARCH PROJECTS PARTICIPATION

NOV 2023 – current | AlmaValue: scouting of Alma Mater’s search results and support
for market enhancement. University of Bologna internal funding for
candidate spinoff projects. Supported by Next Generation EU.
Project: DiscreetAI
Principal Investigator: G. Notarstefano
Position: Member of the development team (4 people)

NOV 2023 – current | PRIN 2022 – Next Generation EU
Project: ECODREAM
Project Coordinator: L. Glielmo, Università del Sannio
Position: Ph.D. Student, member of the University of Bologna group

Nov 2022 – current	Italy–Brasil cooperation project funded by the Italian Ministry of Foreign Affairs and International Cooperation <i>Project:</i> Distributed Optimization for Cooperative Machine Learning in Complex Networks <i>Principal Investigator:</i> G. Notarstefano <i>Position:</i> Ph.D. Student
Nov 2020 – SEP 2021	ERC Starting Grant OPT4SMART <i>Project:</i> Distributed Optimization Methods for Smart Cyber-Physical Networks <i>Principal Investigator:</i> G. Notarstefano <i>Position:</i> Ph.D. Student

AWARDS

MAY 2020	Scholarship for outstanding academic achievements from Alma Mater Studiorum Università di Bologna. Scholarship for outstanding academic achievements – GPA 30.0/30.0
SEP 2018	Total merit-based exemption from Alma Mater Studiorum Università di Bologna. Total exemption from enrolment fees if students obtained the first cycle degree during 2017/18 a.y. at the University of Bologna, by 31 July 2018, within their course’s established time period and with a degree mark of no less than 110/110

TEACHING

A.Y. 2023/2024	Teaching assistant for “Optimal Control - M”, 30h, Master Degree in Automation Engineering, Alma Mater Studiorum Università di Bologna, held by prof. G. NOTARSTEFANO.
A.Y. 2022/2023	Teaching assistant for “Optimal Control - M”, 30h, Master Degree in Automation Engineering, Alma Mater Studiorum Università di Bologna, held by prof. G. NOTARSTEFANO.
A.Y. 2021/2022	Teaching assistant for “Optimal Control - M”, 30h, Master Degree in Automation Engineering, Alma Mater Studiorum Università di Bologna, held by prof. G. NOTARSTEFANO. Teaching assistant for “Robust H_∞ Control, Topic Highlight - M”, 30h, Master Degree in Automation Engineering, Alma Mater Studiorum Università di Bologna, held by prof. L. MIRKIN, <i>Technion - Israel Institute of Technology</i> .
A.Y. 2020/2021	Teaching assistant for “Model Predictive Control, Topic Highlight - M”, 30h, Master Degree in Automation Engineering, Alma Mater Studiorum Università di Bologna, held by prof. M. MUELLER, <i>Leibniz University Hannover</i> .

MENTORING EXPERIENCE AND STUDENT SERVICE

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| 2023 – current | Co-supervision of the master thesis in Automation Engineering at ETH Zürich : Giulia Cutini (2023) |
| 2020 – current | Co-supervision of the master theses in Automation Engineering at University of Bologna: A. Drudi (2024), F. Sartori (collab. with SACMI, 2023), A. Tramaloni (collab. with SACMI, 2022), S. Baroncini (2022), E. Pianazzi (2022), F. Pretini (2022), G. Gaddoni (collab. with Istituto Ortopedico Rizzoli, 2021), L. Fiocchi (2021), L. Sarti (2021), E. Guerra (collab. with Thales Alenia Space, 2021) |

TALKS

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| DEC 2022 | I attended the Intern. Conference on Decision and Control (CDC22) in Cancún (Mexico) and presented the paper “Structured-policy Q-learning: an LMI-based Design Strategy for Distributed Reinforcement Learning”. |
| DEC 2021 | I attended virtually the Intern. Conference on Decision and Control (CDC21) in Austin (TX, USA) and presented the paper “Learning-driven Nonlinear Optimal Control via Gaussian Process Regression”. |

CERTIFICATES

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| NOV 2022 | Qualified for Engineering Profession
Grade: 60/60
Alma Mater Studiorum Università di Bologna
Bologna, Italy. |
| JUN 2020 | IELTS Exam
Grade: 8/9
British Council
Milan, Italy. |

JOURNAL PUBLICATIONS PREPRINTS

- [J1] L. Sforni, G. Carnevale, G. Notarstefano “A Distributed Feedback-based Framework for Nonlinear Aggregative Optimal Control”, *IEEE Transactions on Automatic Control* (under review – second round), 2023.
- [J2] L. Sforni, S. Spedicato, I. Notarnicola, G. Notarstefano “GoPRONTO: a Feedback-based Framework for Nonlinear Optimal Control”, *arXiv:2108.13308* (preprint), 2021.

CONFERENCE PROCEEDINGS

- [C1] L. Sforni, G. Carnevale, I. Notarnicola, G. Notarstefano “On-Policy Data-Driven Linear Quadratic Regulator Via Combined Policy Iteration and Recursive Least Squares”, in *IEEE 62nd Conf. on Decision and Control*, (Marina Bay, Singapore), 2023.
- [C2] L. Pichierri, G. Carnevale, L. Sforni, A. Testa, G. Notarstefano “A Distributed Online Optimization Strategy for Cooperative Robotic Surveillance”, in *IEEE International Conference on Robotics and Automation*, (London, UK), pp. 5537–5543, 2023.
- [C3] L. Sforni, A. Camisa, G. Notarstefano “Structured-policy Q-learning: an LMI-based Design Strategy for Distributed Reinforcement Learning”, in *IEEE 61st Conf. on Decision and Control*, (Cancún, Mexico), pp. 4059–4064, 2022.

- [C4] L. Sforni, I. Notarnicola, G. Notarstefano “Learning-driven Nonlinear Optimal Control via Gaussian Process Regression”, in *IEEE 60th Conf. on Decision and Control*, (Austin, TX, USA), pp. 4406–4411, 2021.

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Bologna,
January 23, 2024

Lorenzo Sforni