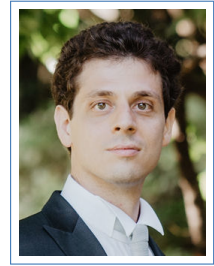


Marco Forgione

Via la Santa 1
CH-6962 Lugano-Viganello
✉ marco.forgione@supsi.ch
🌐 github.com/forgi86
Born in Varese (Italy) on 6/7/1986



Current Position

2024–now **Senior researcher**, *Dalle Molle Institute for Artificial Intelligence (IDSIA) USI-SUPSI*, Lugano, Switzerland

My research interests lie at the intersection of automatic control, machine learning, and dynamical systems theory. Recently, I have led initiatives in meta-learning and foundation models for dynamic environments. Alongside my local team and international partners, I developed tailor-made transformer architectures that function as comprehensive meta-models for entire classes of dynamical systems, unlocking new capabilities in prediction, state estimation, and real-time decision making.

I teach undergraduate courses in Data Science and Artificial Intelligence, and manage a research team including a PhD student, a Software Engineer, and several MSc/BSc students.

Previous Positions

2018–2024 **Researcher**, *Dalle Molle Institute for Artificial Intelligence (IDSIA) USI-SUPSI*, Lugano, Switzerland

I contributed to research, teaching, and project activities closely aligned with my current role.

2017–2018 **Software Engineer**, *SMS Spinnler Fleury AG*, Balerna, Switzerland

SMS Spinnler Fleury AG develops and builds industrial micro-assembly machines.

My main tasks included:

- Programmable Logic Controller (PLC) software development in IEC 61131-3.
- Python scripting for automated code generation and versioning.
- Human-Machine Interface development in LabVIEW.
- After-sales customer support.

2015–2017 **Control Engineering Consultant**, *Whirlpool EMEA*, Biandronno (VA), Italy

I contributed to several R&D activities within Whirlpool's Advanced Development group. In particular, I was involved in:

- Development of temperature estimation and control algorithms for induction cooktops.
- Design of doneness estimation algorithms using humidity measurements.
- Modeling and control of half-bridge and quasi-resonant power converters.
- Implementation of a hardware-in-the-loop software platform for real-time algorithm testing.
- Development of control algorithms for electrically actuated gas valve cooktops.

2014–2015 **Postdoctoral researcher**, *Ecole Centrale de Lyon*, France

I conducted research in collaboration with the CEA Institute of Grenoble on novel control architectures for phase-locked loop circuits applied to wireless telecommunications. I also served as a teaching assistant for graduate-level engineering courses.

Education

- 2010–2014 **PhD in Systems and Control**, *Delft University of Technology*, The Netherlands
Thesis title: *Batch-to-batch learning for model-based control of process systems with application to cooling crystallization*.
- 2007–2009 **MSc in Computer Engineering**, *Università degli Studi di Pavia*
Final grade: **110/110 cum laude**.
Average grade: **29.6/30**.
Thesis title: *Artificial Pancreas: black-box identification of the glucose-insulin metabolisms*.
- 2004–2007 **BSc in Computer Engineering**, *Università degli Studi di Pavia*
Final grade: **110/110 cum laude**.
Average grade: **29.4/30**.
Thesis title: *Design, realization and control of a laboratory-scale gantry crane*.

Grants & Funded Projects

Funds acquired through competitive calls

- 2026–2028 **AI4ES**: Automating AI Development & Integration for Embedded Systems. (Innosuisse). SUPSI representative & co-applicant. Local funding: 412'730 CHF.
- 2023–2027 **PRAESIIDIUM**: Physics-informed machine learning-based prediction and reversion of impaired fasting glucose management. (EU Horizon Europe). Co-applicant for SUPSI. Local budget: 658'438 EUR. Total Budget: 6'467'179 EUR.
- 2023–2026 **SLIMPEC**: A Software suite for LearnIng-based embedded Model PrEdictive Control. (Eureka Eurostars). Local coordinator & co-applicant. Local funding: 249'441 EUR. Total funding: 476'263 EUR.
- 2022 **HIRA**: Hybrid InfraRed System for Affective Computing. (Eureka Eurostars). Local coordinator & main applicant. Local funding: 275'000 EUR. Total funding: 755'000 EUR.
- 2022 **QUACK**: QUAntifying the unCertainty of dynamical neural networKs. (HASLER STIFTUNG). Project coordinator & PI. Budget: 49'515 CHF.
- 2022 **DEALING**: DEEp learning for dynamicAL systems and dynamical systems for deep learnING. (HASLER STIFTUNG). Project coordinator & PI. Budget: 49'555 CHF.

Participation to Funded Research Projects

- 2019–2023 **ADMITTED** (EU H2020). Led the Work Package assigned to SUPSI.
- 2020–2022 **ARTISTIC** (Innosuisse).
- 2019 **DAEDALUS** (EU H2020).
- 2014 **AUTOPROFIT** (EU FP7).
- 2010–2014 **ISPT PH-00-04**: Intelligent Observer and Control for Pharmaceutical Batch Crystallization.

Scientific Service & Activities

- Author of about 50 papers in peer-reviewed journals and conferences.
- Plenary speaker at the 2025 European Network on System Identification. Seminar title: “Meta learning for System Identification”.
- Associate Editor of *Control Engineering Practice* since 2024.
- Appointed International Program Committee (IPC) co-chair for the 2027 SYSID Conference.
- Area co-chair at the 2024 International Conference on Artificial Neural Networks (ICANN).

- Member of the editorial board and Associate Editor (since 2023) of the International Conference on System Theory, Control and Computing (ICSTCC).
- Reviewer of about 60 papers submitted to journals and conferences in the Systems & Control and Machine Learning fields.
- Organizer of two invited sessions at the SYSID conference (in 2021 and 2024).
- Senior member of IEEE and member of the IEEE-CSS Technical Committee on System Identification and Adaptive Control since 2020.

Teaching & Supervision

Teaching Activities

2021–now **SUPSI**, Lugano, Switzerland

- *Bayesian Data Analysis and Probabilistic Programming*: 14 hours of lab sessions since 2022.
- *Probabilistic Reasoning*: 18 hours of lectures/exercise sessions since 2025.
- *Data Science in Python*: 26 hours of lectures/exercise sessions since 2021.
- *Big Data Analytics and Machine Learning*: 36 hours of lectures/exercise sessions in 2021.

2015 **Ecole Centrale de Lyon**, Lyon, France

- *Signal Processing*: 42 hours of exercise sessions and 28 hours of lab sessions.
- *Analog/Digital Converters*: 18 hours of laboratory sessions.

2011–2014 **Delft University of Technology**, Delft, The Netherlands

- *Process Control*: 2 hours of laboratory sessions (2011).
- *Control System Design*: 8 hours of exercise sessions (2012).
- *System Identification*: 4 hours of laboratory sessions (2014).

Supervision & Mentorship

SUPSI, Main supervisor of a PhD student, a software engineer, and 2 Bachelor students.
current Co-supervisor of a PhD student and a researcher with a PhD.

SUPSI, Main supervisor of a software engineer and 2 Master students. Local tutor of 3 visiting
past PhD students.

2010–2014 Daily supervisor of 2 MSc students at Delft University of Technology.

Languages

Italian Native

English Fluent

French Fluent

Dutch Basic

1 year teaching and work experience

B1 certificate obtained in 2012

Selected Recent Publications

M Forgione, Filippo Pura, and Dario Piga. From system models to class models: An in-context learning paradigm. *IEEE Control Systems Letters*, 7:3513–3518, 2023.

Riccardo Busetto, Valentina Breschi, Marco Forgione, Dario Piga, and Simone Formentin. In-context learning of state estimators. *IFAC-PapersOnLine*, 58(15):145–150, 2024.

Marco Forgione, Manas Mejari, and Dario Piga. Model order reduction of deep structured state-space models: A system-theoretic approach. In *2024 IEEE 63rd Conference on Decision and Control (CDC)*, pages 8620–8625. IEEE, 2024.

Federica Gioia, Filippo Pura, Alberto Greco, Dario Piga, Arcangelo Merla, and Marco

Forgione. Contactless estimation of respiratory frequency using 3d-cnn on thermal images. *IEEE Journal of Biomedical and Health Informatics*, 2025.

Lea Multerer, Manuel Acquistapace, Marco Forgione, and Laura Azzimonti. Physics-informed neural networks for hidden insulin dynamics estimation from glucose data. In *International Conference on Artificial Intelligence in Medicine*, pages 283–287. Springer, 2025.

Ankush Chakrabarty, Marco Forgione, Dario Piga, Alberto Bemporad, and Christopher Laughman. Zero-shot parameter estimation of modelica models using patch transformer networks. In *Modelica Conferences*, pages 469–477, 2025.

Angelo Moroncelli, Vishal Soni, Marco Forgione, Dario Piga, Blerina Spahiu, and Loris Roveda. The duality of generative ai and reinforcement learning in robotics: A review. *Information Fusion*, page 104003, 2025.

Matteo Rufolo, Dario Piga, and Marco Forgione. Distributionally robust minimization in meta-learning for system identification. *IEEE Control Systems Letters*, 9:1652–1657, 2025.

Riccardo Busetto, Elia Cereda, Marco Forgione, Gabriele Maroni, Dario Piga, and Daniele Palossi. Nonlinear system identification for a nano-drone benchmark. *Control Engineering Practice*, 2026.

Full Publications & Code references

See my profile on **Google Scholar**, **Scopus**, and **GitHub**.