Tommaso **Grigoletto**

Postoctoral Fellow

Department of Information Engineering, University of Padova
Via Gradenigo 6, 35131 Padova, Italy
tommaso.grigoletto@unipd.it | tommygrigo.github.io

Professional Experience

University of Padua - *Padua, Italy* *November 2023 - December 2025*

Postdoctoral Fellow

- Project: Approximate reduction methods for classical and quantum networks
- Advisor: Prof. Francesco Ticozzi

Ca' Foscari University of Venice - *Venice, Italy* *October 2023 - September 2024*

Teacher on contract

- Course: Fundamentals of automation engineering - 24 hrs.

Dartmouth College - *Hanover, NH (USA)* *August 2022 - February 2023*

Visiting Scholar

- Advisor: Prof. Lorenza Viola

University of Padua - *Padua, Italy* *March 2022(23) - June 2022(23)*

Teaching assistant

- Course: Control Engineering Laboratory
- Two consecutive years: 2022 and 2023

Education

University of Padua - *Padua, Italy* *October 2020 - September 2023*

Ph.D. in Information Engineering

- Thesis: Exact model reduction for quantum systems
- Advisor: Prof. Francesco Ticozzi
- External reviewers: Prof. Alain Sarlette and Prof. Michael Wolf
- Defense scheduled in March 2023

University of Padua - *Padua, Italy* *October 2018 - July 2020*

M.Sc. in Automation Engineering

- Thesis: Measurement-based switching control for quantum systems
- Advisor: Prof. Francesco Ticozzi

University of Padua - *Padua, Italy* *October 2015 - July 2018*

B.Sc. in Information Engineering

- Thesis: Control system for a rocket soft landing
- Advisor: Prof. Mauro Bisiacco

I.T.I.S. Rossi - *Vicenza, Italy* *September 2010 - July 2015*

High school

- Thesis: Control system for a quadcopter
- Advisor: Prof. Paolo Fumene Ferruglio

Research interests

My current research interests lie in the intersection between system theory, quantum control, and classical and quantum probability theory. My current focus is on developing novel model reduction methods for quantum systems that retain fundamental properties of quantum systems such as complete positivity and preservation of total probability.

Publications

Journal Papers

Tommaso Grigoletto, and Francesco Ticozzi. "Algebraic Reduction of Hidden Markov Models" IEEE Transactions on Automatic Control (2023).

Grigoletto, Tommaso, and Francesco Ticozzi. "Stabilization via feedback switching for quantum stochastic dynamics." IEEE Control Systems Letters (2021).

Conference Papers

Tommaso Grigoletto, and Francesco Ticozzi. "Minimal resources for exact simulation of quantum walks" 2022 61th IEEE Conference on Decision and Control (CDC). IEEE, 2022.

Benciolini, Tommaso, **Tommaso Grigoletto**, and Mattia Zorzi. "Image compression by means of the multidimensional circulant covariance extension problem–Revisited." 2020 59th IEEE Conference on Decision and Control (CDC). IEEE, 2020.

Submitted Papers

Tommaso Grigoletto, and Francesco Ticozzi. "Exact model reduction for conditional quantum dynamics" 2024.

Marco Peruzzo, **Tommaso Grigoletto**, and Francesco Ticozzi. "Reconstructing Quantum States from Local Observation: A Dynamical Viewpoint" 2024.

Tommaso Grigoletto, and Francesco Ticozzi. "Model Reduction for Quantum Systems: Discrete-time Quantum Walks and Open Markov Dynamics" 2023.

Weichao Liang, **Tommaso Grigoletto**, and Francesco Ticozzi. "Switching stabilization of quantum stochastic master equations" 2022.

Awards, Fellowships, & Grants

2022 **Gini scholarship**, Fondazione Aldo Gini, University of Padua
2020 **Ph.D. scholarship**, University of Padua
2015 **Tekne scholarship**, Regione Veneto
2014 **Leonardo scholarship**, CPV
2013 **Partecipated to the Robocup World Cup**, in Eindhoven

Personal skills

Languages

Mother tongue: **Italian**
Other languages: **English ($\simeq$ C1 level)**

Programming skills

Intermediate: **Java, C++**
Advanced: **Python, Matlab, Latex**