

GIACOMO BAGGIO

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APPOINTMENTS	Assistant Professor Department of Information Engineering <i>University of Padova, Italy</i>	Oct. 2019 – Present
	Postdoctoral Scholar Department of Mechanical Engineering <i>University of California, Riverside, USA</i> - Advisor: Prof. F. Pasqualetti	Mar. 2018 – Sep. 2019
	Visiting Scholar Department of Engineering <i>University of Cambridge, UK</i> - Advisor: Prof. R. Sepulchre	Sep. 2015 – June 2016
EDUCATION	Ph.D. in Information Engineering Department of Information Engineering <i>University of Padova, Italy</i> - Advisor: Prof. A. Ferrante - Final grade: cum laude	Feb. 2018
	“Laurea Magistrale” (M.Sc. equivalent), Automation Engineering <i>University of Padova, Italy</i> - Final grade: 110/110 cum laude	April 2014
	“Laurea Triennale” (B.Sc. equivalent), Mechatronics Engineering <i>University of Padova, Italy</i> - Final grade: 110/110 cum laude	Sept. 2011
HONORS & AWARDS	Best Student Paper Award (co-author) <i>American Control Conference (ACC), 2019</i>	2019
	Best Student Paper Award (student author) <i>European Control Conference (ECC), 2018</i>	2018
	Outstanding Master Thesis Recognition <i>Department of Information Engineering, University of Padova, Italy</i>	2014
TEACHING EXPERIENCE	University of Padova Instructor: - <i>Systems Theory, “Laurea Magistrale” (M.Sc.), Mechatronics Engineering</i>	2019-20
	Teaching assistant: - <i>Estimation and Filtering, “Laurea Magistrale” (M.Sc.), Automation Engineering</i>	2016-17

University of Cambridge

Teaching assistant:

- Signals and Systems (3F1), *Engineering Tripos Part IIA*

2015-16

INVITED TALKS

Invited talk @ [Controlling Complex Networks](#),
Satellite symposium of NetSci2020, Rome

2020

Invited talk @ Polytechnic University of Turin,
Department of Mathematical Sciences, Turin

2018

Invited talk @ University of Padova,
Department of Mathematics, Padova

2017

PUBLICATIONS

Submitted Papers

1. **G. Baggio**, D. S. Bassett, and F. Pasqualetti,
“[Data-Driven Control of Complex Networks](#)”
Journal paper, submitted, 2020.
2. **G. Baggio** and S. Zampieri,
“The Numerical Abscissa as an Indicator of Network Performance”
Conference paper, submitted, 2020.

Journal Papers

1. **G. Baggio**, V. Rutten, G. Hennequin, and S. Zampieri,
“[Efficient Communication in Complex Dynamical Networks: The Role of Matrix Non-Normality](#)”
Science Advances, In press, 2020.
2. T. Menara, **G. Baggio**, D. S. Bassett, and F. Pasqualetti,
“[Conditions for Feedback Linearization of Network Systems](#)”,
IEEE Control Systems Letters, vol. 4, no. 3, pp. 578-583, July 2020.
3. T. Menara, **G. Baggio**, D. S. Bassett, and F. Pasqualetti,
“[Stability Conditions for Cluster Synchronization in Networks of Heterogeneous Kuramoto Oscillators](#)”,
IEEE Transactions on Control of Network Systems, vol. 7, no. 1, pp. 302-314, March 2020.
4. **G. Baggio**, V. Katewa and F. Pasqualetti,
“[Data-Driven Minimum-Energy Controls for Linear Systems](#)”,
IEEE Control Systems Letters, vol. 3, no. 3, pp. 589-594, July 2019.
5. **G. Baggio**, A. Ferrante, and R. Sepulchre,
“[Conal Distances Between Rational Spectral Densities](#)”,
IEEE Transactions on Automatic Control, vol. 64, no. 5, pp. 1848-1857, May 2019.
6. B. Zhu and **G. Baggio**,
“[On the Existence of a Solution to a Spectral Estimation Problem *à la* Byrnes–Georgiou–Lindquist](#)”
IEEE Transactions on Automatic Control, vol. 64, no. 2, pp. 820-825, 2019.
7. **G. Baggio** and A. Ferrante,
“[Parametrization of Minimal Spectral Factors of Discrete-Time Rational Spectral Densities](#)”

- IEEE Transactions on Automatic Control*, vol. 64, no. 1, pp. 396-403, 2019.
8. **G. Baggio**,
 “Further Results on the Convergence of the Pavon–Ferrante Algorithm for Spectral Estimation”
IEEE Transactions on Automatic Control, vol. 63, no. 10, pp. 3510-3515, 2018.
 9. N. Bof, **G. Baggio**, and S. Zampieri,
 “On the Role of Network Centrality in the Controllability of Complex Networks”
IEEE Transactions on Control of Network Systems, vol. 4, no. 3, pp. 643-653, 2017.
 10. **G. Baggio** and A. Ferrante,
 “On Minimal Spectral Factors with Zeroes and Poles lying on Prescribed Regions”
IEEE Transactions on Automatic Control, vol. 61, no. 8, pp. 2251-2255, 2016.
 11. **G. Baggio** and A. Ferrante,
 “On the Factorization of Rational Discrete-Time Spectral Densities”,
IEEE Transactions on Automatic Control, vol. 61, no. 4, pp. 969-981, 2016.

Conference Papers

1. **G. Baggio** and F. Pasqualetti,
 “Learning Minimum-Energy Controls from Heterogeneous Data”,
American Control Conference (ACC), Denver, CO, USA, 2020, Accepted.
2. T. Menara, **G. Baggio**, D. S. Bassett, and F. Pasqualetti
 “A Framework to Control Functional Connectivity in the Human Brain”,
IEEE Conference on Decision and Control (CDC), pp. 4697-4704, Nice, France, 2019.
3. **G. Baggio**, S. Zampieri, and C. W. Scherer,
 “Gramian Optimization with Input-Power Constraints”,
IEEE Conference on Decision and Control (CDC), pp. 5686-5691, Nice, France, 2019.
4. F. Ticozzi, **G. Baggio**, and L. Viola,
 “Quantum Information Encoding from Stabilizing Dynamics”
IEEE Conference on Decision and Control (CDC), pp. 413-418, Nice, France, 2019.
5. **G. Baggio**, V. Katewa, F. Pasqualetti, and S. Zampieri,
 “The Shannon Capacity of Linear Dynamical Networks”,
European Control Conference (ECC), pp. 602-607, Naples, Italy, 2019.
6. T. Menara, **G. Baggio**, D. S. Bassett, and F. Pasqualetti,
 “Exact and Approximate Stability Conditions for Cluster Synchronization of Kuramoto Oscillators”,
American Control Conference (ACC), pp. 205-210, Philadelphia, PA, USA, 2019.
 (Best Student Paper Award Winner)
7. **G. Baggio**, V. Rutten, G. Hennequin, and S. Zampieri,
 “Information Transmission in Dynamical Networks: The Normal Network Case” *IEEE Conference on Decision and Control (CDC)*, pp. 2543-2548, Miami, FL, USA, 2018.
8. **G. Baggio** and S. Zampieri,
 “On the Relation between Non-normality and Diameter in Linear Dynamical Networks”,
European Control Conference (ECC), pp. 1839-1844, Limassol, Cyprus, 2018.

(Best Student Paper Award Winner)

9. G. Michieletto, S. Milani, A. Cenedese, and **G. Baggio**,
 “Improving Consensus-based Distributed Camera Calibration via Edge Pruning and Graph Traversal Initialization”,
IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), pp. 3166-3170, Calgary, Canada, 2018.
10. **G. Baggio** and R. Sepulchre,
 “LTI Stochastic Processes: a Behavioral Perspective”,
Proceedings of 20th IFAC World Congress, pp. 2806-2811, Toulouse, France, 2017.
11. **G. Baggio**, “On the Convergence of a Matricial Fixed-Point Iteration Connected with Spectral Estimation”,
Proceedings of 20th IFAC World Congress, pp. 7415-7420, Toulouse, France, 2017.
12. **G. Baggio**, F. Ticozzi, and L. Viola, “Quantum State Preparation by Controlled Dissipation in Finite Time: From Classical to Quantum Controllers”,
IEEE Conference on Decision and Control (CDC), pp. 1072-1077, Maui, HI, USA, 2012.

**PROFESSIONAL
ACTIVITIES**
Peer Review activity

International journals: IEEE Transactions on Automatic Control ◦ Automatica ◦ Control Systems Letters ◦ Systems and Control Letters ◦ IEEE Transactions on Control of Network Systems ◦ IEEE Transactions on Control Systems Technology ◦ IEEE Transactions on Network Science and Engineering ◦ European Journal of Control ◦ IEEE Access.

International conferences: IEEE Control and Decision Conference (CDC) ◦ IEEE American Control Conference (ACC) ◦ European Control Conference (ECC) ◦ IFAC World Congress ◦ IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys) ◦ Indian Control Conference (ICC).

Editorial Activity

Complex Networks 2020 (Ninth International Conference on Complex Networks & Their Applications), Member of the Program Committee

Session Chair/Organizer

IEEE CDC 2019, Chair of the session “Control of Networks II”

Professional Affiliations

IEEE, Member

2019–Present

IEEE Control System Society (CSS), Member

2019–Present