

FRANCESCA PARISE
- CURRICULUM VITAE -

Laboratory for Information and Decision Systems, Massachusetts Institute of Technology (MIT)

<i>email</i>	parisef@mit.edu
<i>website</i>	https://parisef.mit.edu
<i>date of birth</i>	10 October 1988
<i>nationality</i>	Italian
<i>last update</i>	April 2020

EDUCATION

INSTITUTION	DEGREE	DATE
University of Padova	BS in Information Engineering (110/110 cum Laude)	Jul 2010
University of Padova	MS in Control Engineering (110/110 cum Laude)	Jul 2012
Galilean School of Higher Education	Completion Certificate (100/100 cum Laude)	Jun 2013
ETH, Zurich	Doctor of Sciences	Oct 2016

TITLE OF DOCTORAL THESIS:

Inference and control for populations of systems: from aggregative games to systems biology

Available online: <https://doi.org/10.3929/ethz-a-010859584>

PhD advisor: Professor John Lygeros, ETH

Co-examiners: Professor John Tsitsiklis (MIT), Professor Maria Elena Valcher (Padova University)

PROFESSIONAL EXPERIENCE

<i>Assistant professor</i> , ECE, Cornell University	(starting from Jul 2020)
<i>Visiting assistant professor</i> , ECE, Cornell University	Aug 2019 - Jun 2020
<i>Postdoctoral researcher</i> , EECS, MIT (Advisor: Prof. A. Ozdaglar)	Nov 2016 - Jun 2020

FIELDS OF INTEREST

Network, Control and Game Theory: Theory and Algorithms,
Social and Economic Networks: Learning, Information Dynamics, Contagion Models,
Network Economics: Pricing and Resource Allocation Games, Targeted Interventions,
Systems Biology: Biochemical Reaction Networks, Inference and Control

AWARDS and FELLOWSHIPS

<i>SNSF Advanced Postdoc Mobility Fellowship</i> (P300P2-177805)	Dec 2017
<i>ETH Medal</i> (Awarded to honor outstanding PhD dissertations at ETH Zurich)	Dec 2017

Participant of Rising Stars in EECS 2017 (By-invitation-only workshop)	Nov 2017
SNSF Early Postdoc Mobility Fellowship (P2EZP2-168812)	Jun 2016
Guglielmo Marin Award, Istituto Veneto di Scienze Lettere ed Arti	May 2015
LLP/ Erasmus scholarship	Apr 2011
Galilean School of Higher Education (http://www.unipd-scuolagalileiana.it/en/)	Sep 2007
National Mathematics and Physics Olympiad	years 2004 to 2007

PROFESSIONAL SERVICE

Program Committee:

- 2nd LADC Conference 2020

Session/Cluster Organizer:

- Chair and organizer of Invited Session at INFORMS 2018 Nov 2018

- Chair and organizer of Invited Session at IEEE CDC 2016 Dec 2016

Reviewer for:

- Control: *Automatica*, *IEEE Transaction on Automatic Control (TAC)*, *IEEE Transactions on Control of Network Systems (TCNS)*, *IEEE Transaction on Control Systems Technology*, *IEEE Control Systems Letters*, *IEEE Conference on Decision and Control (CDC)*, *European Control Conference (ECC)*, *American Control Conference (ACC)*, *IFAC World Congress*
- Optimization and Operations Research: *Mathematics of Operations Research*, *Journal of Optimization Theory and Applications*,
- Economics: *International Economic Review*, *Review of Economic Studies*, *Games and Economic Behavior*

PUBLICATIONS

- Preprints

[P1] E. Meigs, **F. Parise**, A. Ozdaglar, D. Acemoglu. “Optimal dynamic information provision in traffic routing.” (<https://arxiv.org/abs/2001.03232>)

[P2] **F. Parise**, A. Ozdaglar. “Graphon Games.” Revise and resubmit *Econometrica*. (<https://arxiv.org/abs/1802.00080>)

- Papers in Refereed Journals

[J1] **F. Parise**, S. Grammatico, B. Gentile and J. Lygeros. “Network aggregative games and distributed mean field control via consensus theory”. *Automatica*, 2020. (<https://arxiv.org/abs/1506.07719>)

- [J2] **F. Parise***, B. Gentile* and J. Lygeros. “A distributed algorithm for average aggregative games with coupling constraints”, *IEEE Transactions on Control of Network Systems*, 2019. (<https://arxiv.org/abs/1706.04634>)
- [J3] **F. Parise**, A. Ozdaglar. “A variational inequality framework for network games: Existence, uniqueness, convergence and sensitivity analysis.” *Games and Economic Behaviour*, 2019. (<https://arxiv.org/abs/1712.08277>)
- [J4] M. Avella-Medina*, **F. Parise***, M.T. Schaub*, and S. Segarra*. “Centrality measures for graphons”. *IEEE Transactions on Network Science and Engineering*, 2018. (<https://arxiv.org/abs/1707.09350>)
- [J5] D. Paccagnan, **F. Parise** and J. Lygeros. “On the Efficiency of Nash Equilibria in Charging Games”. *IEEE Control Systems Letters*, 2018. (<https://arxiv.org/abs/1803.02583>)
- [J6] D. Paccagnan*, B. Gentile*, **F. Parise***, M. Kamgarpour and J. Lygeros. “Nash and Wardrop equilibria in aggregative games with coupling constraints”. *IEEE Transaction on Automatic Control*, 2018. (<https://arxiv.org/abs/1702.08789>)
- [J7] **F. Parise**, M.E. Valcher and J. Lygeros. “Computing the projected reachable set of stochastic biochemical reaction networks modelled by switched affine systems”. *IEEE Transaction on Automatic Control*, 2018. (<https://arxiv.org/abs/1705.00400>)
- [J8] S. Grammatico, **F. Parise**, M. Colombino and J. Lygeros. “Decentralized convergence to Nash equilibria in constrained deterministic mean field control”. *IEEE Transaction on Automatic Control*, vol. 61, no. 11, pp. 3315–3329, 2016. (<https://arxiv.org/abs/1410.4421>)
- [J9] **F. Parise**, J. Lygeros, J. Ruess. “Bayesian inference for stochastic individual-based models of ecological systems: a pest control simulation study”. *Frontiers in Environmental Science*, vol. 3, no. 42, 2015. (<https://doi.org/10.3389/fenvs.2015.00042>)
- [J10] J. Ruess*, **F. Parise***, A. Miliadis-Argeitis, M. Khammash, J. Lygeros. “Iterative experiment design guides the characterization of a light-inducible gene expression circuit”. *Proceedings of the National Academy of Sciences (PNAS)*, vol. 112, no. 26, pp. 8148–8153, 2015. (<https://doi.org/10.1073/pnas.1423947112>)

(* denotes equal contribution)

- Proceedings of Refereed Conferences

- [C1] E. Meigs, **F. Parise** and A. Ozdaglar . “Learning in Repeated Stochastic Network Aggregative Games”, in *Proceedings of the IEEE Conference on Decision and Control (CDC)*, Nice, France, Dec 2019.
- [C2] **F. Parise**, A. Ozdaglar. “Graphon Games.” in *EC '19: Proceedings of the 2019 ACM Conference on Economics and Computation*, June 2019.
- [C3] D. Paccagnan, **F. Parise** and J. Lygeros. “On the Efficiency of Nash Equilibria in Charging Games”, in *Proceedings of the IEEE Conference on Decision and Control (CDC)*, Fontainebleau, Florida, Dec 2018.

- [C4] **F. Parise** and A. Ozdaglar. “Sensitivity analysis for network aggregative games”, in *Proceedings of the IEEE Conference on Decision and Control (CDC)*, Melbourne, Australia, Dec 2017.
- [C5] E. Meigs, **F. Parise** and A. Ozdaglar . “Learning dynamics in stochastic routing games”, in *Proceedings of the Allerton Conference*, Allerton, IL, USA, Oct 2017.
- [C6] **F. Parise**, M.E. Valcher and J. Lygeros. “Reachability analysis for switched affine systems and its application to controlled stochastic biochemical reaction networks”, in *Proceedings of the IEEE Conference on Decision and Control (CDC)*, Las Vegas, USA, Dec 2016.
- [C7] D. Paccagnan*, B. Gentile*, **F. Parise***, M. Kamgarpour and J. Lygeros. “Distributed computation of generalized Nash equilibria in quadratic aggregative games with affine coupling constraints”, in *Proceedings of the IEEE Conference on Decision and Control (CDC)*, Las Vegas, USA, Dec 2016.
- [C8] L. Moeller, B. Gentile, **F. Parise**, S. Grammatico and J. Lygeros. “Constrained deterministic leader-follower mean field control”, in *Proceedings of the American Control Conference (ACC)*, Boston, MA, USA, Jul 2016.
- [C9] **F. Parise**, B. Gentile, S. Grammatico and J. Lygeros. “Network aggregative games: Distributed convergence to Nash equilibria”, in *Proceedings of the IEEE Conference on Decision and Control (CDC)*, Osaka, Japan, Dec 2015, pp. 2295–2300.
- [C10] **F. Parise**, M.E. Valcher and J. Lygeros. “On the use of hyperplane methods to compute the reachable set of controlled stochastic biochemical reaction networks”, in *Proceedings of the IEEE Conference on Decision and Control (CDC)*, Osaka, Japan, Dec 2015, pp. 1259–1264.
- [C11] S. Grammatico, **F. Parise** and J. Lygeros. “Constrained linear quadratic deterministic mean field control: Decentralized convergence to Nash equilibria in large populations of heterogeneous agents”, in *Proceedings of the IEEE Conference on Decision and Control (CDC)*, Osaka, Japan, Dec 2015, pp. 4412–4417
- [C12] **F. Parise**, S. Grammatico and J. Lygeros. “On constrained mean field control for large populations of heterogeneous agents: Decentralized convergence to Nash equilibria”, in *Proceedings of the European Control Conference (ECC)*, Linz, Austria, Jun 2015, pp. 3316–3321.
- [C13] S. Grammatico, B. Gentile, **F. Parise**, J. Lygeros. “A mean field control approach for demand side management of large populations of thermostatically controlled loads”, in *Proceedings of the European Control Conference (ECC)*, Linz, Austria, Jun 2015, pp. 3548–3553.
- [C14] **F. Parise**, M. Colombino, S. Grammatico and J. Lygeros. “Mean field constrained charging policy for large populations of plug-in electric vehicles”, in *Proceedings of the IEEE Conference on Decision and Control (CDC)*, Los Angeles, CA, USA, Dec 2014, pp. 5101–5106.
- [C15] **F. Parise**, M.E. Valcher and J. Lygeros. “On the reachable set of the controlled gene expression system”, in *Proceedings of the IEEE Conference on Decision and Control (CDC)*, Los Angeles, CA, USA, Dec 2014, pp. 4597–4604.
- [C16] **F. Parise** and G. Picci. “Identification of high tide models in the Venetian lagoon: variable selection and G-LASSO”, in *Proceedings of the IFAC World Congress*, Cape Town, South Africa, Aug 2014, pp. 10385–10390.

- [C17] **F. Parise**, J. Ruess and J. Lygeros. “Grey-box techniques for the identification of a controlled gene expression model”, in *Proceedings of the European Control Conference (ECC)*, Strasbourg, France, Jun 2014, pp. 1498–1503.
- [C18] **F. Parise** and G. Picci. “System identification for tide prediction in the Venetian lagoon”, in *Proceedings of the European Control Conference (ECC)*, Zurich, Switzerland, Jul 2013, pp. 2994–2999.

INVITED TALKS

Politecnico di Torino, Workshop: Network Dynamics in Social, Economic & Financial Sciences	Nov 2019
Monash University, Department of Electrical and Computer Systems Engineering	May 2019
EPFL	May 2019
Oxford University, Department of Engineering Science	Apr 2019
Imperial College, Department of Computing	Apr 2019
Columbia, Electrical Engineering	Mar 2019
University of Illinois at Urbana-Champaign, Electrical and Computer Engineering	Mar 2019
Cornell, Electrical and Computer Engineering	Mar 2019
UCLA, Electrical and Computer Engineering	Feb 2019
Northwestern University, Industrial Engineering and Management Sciences	Feb 2019
Cornell Tech, Operations Research and Information Engineering	Feb 2019
Stanford, Graduate School of Business	Jan 2019
Caltech, Computing and Mathematical Sciences	Jan 2019
NETGCOOP 2018, Invited talk	Nov2018
University of Pennsylvania, Electrical and Systems Engineering	Mar 2018
Santa Barbara University, Mechanical Engineering	Mar 2018
Boston University, CISE Graduate Student Workshop	Jan 2017

TEACHING

Teaching assistant for the courses:

- Systems Biology Block Course (ETH, PhD level course)	years 2015 to 2016
- Advanced Topics in Control (ETH, M.Sc. level course)	spring 2015 to 2016
- Matlab Course (ETH, B.Sc. level course)	fall 2013 to 2015
- Signal and Systems II (ETH, B.Sc. level course)	spring 2013 to 2015

RESEARCH VISITS

University of Trento, Department of Mathematics (Host: Prof. F. Bagagiolo)	Jan 2017
IST Austria, Prof T. Henzinger’s Group (Host: Dr. J. Ruess)	Nov 2015, Apr 2016
Imperial College London, Electrical & Electronic Eng. (Host: Prof. A. Astolfi)	Feb - Jun 2012