

CURRICULUM VITAE ET STUDIORUM–PAOLO FRASCA

Name (first last): Paolo Frasca

Date of birth: 29-7-1981

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CURRENT POSITIONS

Oct 2016 – CNRS Researcher (*Chargé de Recherche*)
[NeCS team](#)
Univ. Grenoble Alpes, CNRS, Inria, Grenoble INP, GIPSA-Lab
38000 Grenoble, France

EDUCATION

March 2009 PhD: Applied Mathematics, Politecnico di Torino, Torino, Italy
Thesis: *Distributed optimization with communication constraints*
Advisors: Fabio Fagnani, Sandro Zampieri

PREVIOUS POSITIONS

2013 – 2016 Assistant Professor (*Universitaire Docent*)
Hybrid Systems group, Department of Applied Mathematics (TW)
Faculty of Electrical Engineering, Mathematics and Computer Science (EWI)
University of Twente, the Netherlands

2010 – 2013 Post-doc researcher
Department of Applied Mathematics, Politecnico di Torino, Italy
Working with Fabio Fagnani

2008 – 2010 Post-doc researcher
IAC-CNR, National Research Council, Rome, Italy
Working with Benedetto Piccoli

2006 – 2008 PhD scholarship from the CRT Foundation-Lagrange Institute, Politecnico di Torino

AWARDS

SIAG/CST Best SICON Paper Prize granted by the SIAM Activity Group on Control and Systems Theory for the paper “F. Bullo, R. Carli, and P. Frasca. Gossip coverage control for robotic networks: dynamical systems on the space of partitions. SIAM Journal on Control and Optimization, 50 (1), pp. 419-447, 2012”, July 2013

COMMISSIONS OF TRUST

Editorial boards and committees:

2017 – **Associate Editor**, IEEE Control Letters

2017 – **Associate Editor**, Asian Journal of Control

2014 – **Subject Editor**, International Journal of Robust and Nonlinear Control

2016 Associate Editor at Large, IP Committee, 55th IEEE Conference on Decision and Control

2013 – Associate Editor, Conference Editorial Board, IEEE Control System Society
- 2014, 2015, 2016, 2017 American Control Conference
- IEEE Conference on Decision and Control, 2013, 2014, 2015, 2016

2013 – Associate Editor, Conference Editorial Board, European Control Association (EUCA)
- 2014, 2015, 2016 European Control Conference

2016 – Associate Editor, CASE CEB, IEEE Robotics and Automation Society

2016, 2014 Associate Editor, International Program Committee, 22nd and 21st International Symposium on Mathematical Theory of Networks and Systems

Referee:

2015 Referee on book proposals, Wiley

2009 – Reviewer for leading journals and conferences in Systems and Control (100+ papers)

2014 – 2016 Referee on funding proposals: French National Research Agency (ANR)

PhD graduation committees:

Florian Dietrich, Université de Lorraine, Nancy, France (Nov. 2017)
Laura Dal Col, Université de Toulouse, France (October 2016)
Georg Seyboth, University of Stuttgart, Germany (January 2016)
Francesco Ferrante, Université de Toulouse, France (October 2015)
Matin Jafarian, University of Groningen, NL (June 2015)

Hiring committees: *Concours CR2* (Researcher), INRIA Saclay, Paris, Spring 2017

(CO)SUPERVISION OF STUDENTS

N. Martin, *On-line partitioning algorithms for evolutionary scale-free networks*, PhD GIPSA, 2016-
F. Acciani, *Control and communication for automated driving*, PhD UT, 2014-
F.L.H. Klein Schaarsberg, *Filter bubbles in opinion dynamics*, BS University of Twente, 2016
N. Chan, *Robust relative estimation*, MS University of Twente, 2016
M. de Roo, *Optimal event handling by a UAV network*, MS University of Twente, 2015
F. Broekema, *Robust sensor coverage in a two-dimensional area*, MS UT, 2015
B. de Witte, *Network games, information spread and endogenous security*, MS UT, 2015
W.S. Rossi, *Relative localization on large networks*, MS Politecnico di Torino, 2012
L. Vassio, *Harmonic influence centrality on networks*, MS Politecnico di Torino, 2011

TEACHING ACTIVITIES (selected)

2014 – 2016 Hybrid Dynamical Systems (graduate), University of Twente
2015 Introduction to Network Coordination (graduate), GIPSA-lab, Grenoble, France
2014 – 2015 Systems and Signals (undergraduate), University of Twente
2014 Network Dynamics (graduate), Dutch Institute of Systems and Control (DISC), NL
2012 – 2013 Dynamics over Networks (graduate), PoliTo

COURTESY AFFILIATIONS

2016 – Associate faculty, University of Twente, Enschede, Netherlands
2013 – Research associate, IEIIT-CNR, National Research Council, Torino, Italy

Selected extended visits (with fellowship/local support)

- University of Cagliari, Italy, *Invited Professor*, Spring 2017
- University of Toulouse and LAAS CNRS, *Invited Professor*, Summer 2016
- Osaka University, Osaka, Japan. Host: Yasumasa Fujisaki. December 2015
- University of California, Riverside (CA), USA. Host: Fabio Pasqualetti. December 2014
- University of California, Santa Barbara (CA), USA. Host: Francesco Bullo. September–October 2012, June 2011, and February–July 2008
- Université catholique de Louvain, Belgium. Host: Jean-Charles Delvenne, April 2011
- Lunds Tekniska Högskola, Lund, Sweden. Host: Anders Rantzer. February–April 2010

Invited presentations (recent, selected)

- “Harmonic influence in social networks and identification of influencers by message passing”, WUDS’17 workshop, Banyuls-sur-mer, July 6, 2017
- “Non-smooth and hybrid systems in opinion dynamics”, IEEE CDC satellite workshop on Dynamics and Control in Social Networks, Las Vegas, Nevada, December 11, 2016
- “Ergodic opinion dynamics from prejudices and gossiping”. Workshop on Mathematical Models in Social Dynamics, Politecnico di Torino, Torino, Italy, October 1-2, 2015
- “Distributed estimation from relative measurements” (**keynote**), SICE International Symposium on Control Systems (ISCS), Tokyo, Japan, March 4–7, 2015

I regularly visit national and foreign universities for scientific discussions and to present my work by invitation of my colleagues (more than 30 such talks since 2008)

MEMBERSHIPS OF SCIENTIFIC SOCIETIES AND ACTIVITY GROUPS

2013 – IEEE, Control Systems Society and Robotics and Automation Society
2013 – CSS Technical Committee “Networks and Communications Systems”
2013 – IFAC Technical Committee 1.5 on Networked Systems
2014 – IFAC Technical Committee 2.5 on Robust Control

PUBLICATIONS

I have (co)authored 1 book, 26 articles in international journals, 32 full-length articles in the proceedings of the international conferences, 2 articles appeared as a book chapter, as well as several abstracts in national and international conferences. More and up to date information is available on [my Google Scholar profile](#).

Book

- F. Fagnani and P. Frasca. *Introduction to averaging dynamics over networks*. Lecture Notes in Control and Information Sciences, Springer Nature, 2017. ISBN: 978-3-319-68021-7

Selected journal papers

- G. Bianchin, P. Frasca, A. Gasparri, and F. Pasqualetti. The observability radius of networks. *IEEE Transactions on Automatic Control*, 62 (6): 3006–3013, 2017
- P. Frasca, F. Garin, B. Gerencsér, and J.M. Hendrickx. Optimal one-dimensional coverage by unreliable sensors. *SIAM Journal on Control and Optimization*, 53 (5), 3120–3140, 2015
- W.S. Rossi, P. Frasca, and F. Fagnani. Average resistance of toroidal graphs. *SIAM Journal on Control and Optimization*, 53 (4): 2541–2557, 2015
- P. Frasca, H. Ishii, C. Ravazzi, and R. Tempo. Distributed randomized algorithms for opinion formation, centrality computation and power systems estimation: A tutorial overview. *European Journal of Control*, 24: 2–13, July 2015
- C. Ravazzi, P. Frasca, R. Tempo, and H. Ishii. Ergodic randomized algorithms and dynamics over networks. *IEEE Transactions on Control of Network Systems*, 2 (1): 78–87, 2015
- G.S. Seyboth, D.V. Dimarogonas, K.H. Johansson, P. Frasca, and F. Allgöwer. On robust synchronization of heterogeneous linear multi-agent systems with static couplings. *Automatica*, 53: 392–399, March 2015
- L. Vassio, F. Fagnani, P. Frasca, and A. Ozdaglar. Message passing optimization of Harmonic Influence Centrality. *IEEE Transactions on Control of Network Systems*, 1 (1): 109–120, 2014
- R. Patel, P. Frasca, and F. Bullo. Centroidal area-constrained partitioning for robotic networks. *ASME Journal of Dynamic Systems, Measurement and Control*, 136 (3): 031024, 2014
- C. De Persis and P. Frasca. Robust self-triggered coordination with ternary controllers. *IEEE Transactions on Automatic Control*, 58 (12): 3024–3038, 2013
- P. Frasca and J.M. Hendrickx. On the mean square error of randomized averaging algorithms. *Automatica*, 49 (8): 2496–2501, 2013
- J. W. Durham, R. Carli, P. Frasca, and F. Bullo. Discrete partitioning and coverage control for gossiping robots. *IEEE Transactions on Robotics*, 28 (2): 364–378, 2012
- F. Bullo, R. Carli, and P. Frasca. Gossip coverage control for robotic networks: dynamical systems on the space of partitions. *SIAM Journal on Control and Optimization*, 50 (1): 419–447, 2012
- F. Ceragioli and P. Frasca. Continuous and discontinuous opinion dynamics with bounded confidence. *Nonlinear Analysis: Real World Applications*, 13 (3): 1239–1251, 2012
- P. Frasca. Continuous-time quantized consensus: Convergence of Krasovskii solutions. *Systems and Control Letters*, 61(2): 273–278, 2012
- F. Ceragioli, C. De Persis, and P. Frasca. Discontinuities and hysteresis in quantized average consensus. *Automatica*, 47(9): 1916–1928, 2011
- F. Fagnani and P. Frasca. Broadcast gossip averaging: interference and unbiasedness in large Abelian Cayley networks. *IEEE Journal of Selected Topics in Signal Processing*, 5 (4): 866–875, 2011
- R. Carli, G. Como, P. Frasca, and F. Garin. Distributed averaging on digital erasure networks. *Automatica*, 47 (3): 115–121, 2011
- R. Carli, F. Fagnani, P. Frasca, and S. Zampieri. Gossip consensus algorithms via quantized communication. *Automatica*, 46 (1): 70–80, 2010
- P. Frasca, R. Carli, F. Fagnani, and S. Zampieri. Average consensus on networks with quantized communication. *International Journal of Robust and NonLinear Control*, 19 (16): 1787–1816, 2009