

SIMONE FORMENTIN'S CURRICULUM VITAE

UPDATED: JULY 02, 2017

PERSONAL DATA

Name: Simone Formentin

Date of birth: February 23, 1984

Place of birth: Legnano (MI), Italy

Address: Via Tortona, 2 - 21052 Busto Arsizio (VA), Italy

Family status: Married, father of Luna (born June 16, 2014) and Andrea (born January 8, 2016)

E-mail: simone.formentin@polimi.it

Web: <http://home.deib.polimi.it/formentin/>

CURRENT POSITION

October 2016 – Today

Tenure-track Assistant Professor. Italian qualification for associate professorship, section 09/G1 (Automatica) obtained on April 07, 2017.

DIPARTIMENTO DI ELETTRONICA, INFORMAZIONE E BIOINGEGNERIA, POLITECNICO DI MILANO, ITALY

PREVIOUS POSITIONS

March 2014 – September 2016

Fixed-term Assistant Professor

DIPARTIMENTO DI ELETTRONICA, INFORMAZIONE E BIOINGEGNERIA, POLITECNICO DI MILANO, ITALY

September 2012 – February 2014

Post-doctoral Fellow

DIPARTIMENTO DI INGEGNERIA GESTIONALE, DELL'INFORMAZIONE E DELLA PRODUZIONE, UNIVERSITÀ DEGLI STUDI DI BERGAMO, ITALY

December 2011 – August 2012

Post-doctoral Fellow

LABORATOIRE D'AUTOMATIQUE, EPFL LAUSANNE, SWITZERLAND

EDUCATION

Ph.D. in Information Technology (with Doctor Europæus certification) February 2012

POLITECNICO DI MILANO, ITALY

Thesis title: "Direct data-driven control system design: theory and applications" (in English)

Advisor: Prof. Sergio M. Savaresi, Grade: A *summa cum laude*

Reviewers: Prof. Michel Verhaegen (TU Delft, The Netherlands), Prof. Lars Eriksson (Linköping University, Sweden)

Qualifier exam to practice the profession of ICT engineering September 2009

POLITECNICO DI MILANO, ITALY

Master of Science in Automation Engineering December 2008

POLITECNICO DI MILANO, ITALY

Thesis title: "Analisi e sviluppo di un sistema di controllo trazione per veicoli a due ruote" (in Italian)

Advisor: Prof. Sergio M. Savaresi (in collaboration with Aprilia S.p.A.), Grade: 110/110 *summa cum laude*

Bachelor of Science in Automation Engineering September 2006

POLITECNICO DI MILANO, ITALY

Thesis title: "Dimensionamento e controllo di un microgeneratore ad energia alternativa" (in Italian)

Advisor: Prof. Marco Mauri, Grade: 110/110 *summa cum laude*

Diploma di Maturità Scientifica July 2003

High-school diploma specializing in scientific studies

LICEO SCIENTIFICO GALILEO GALILEI, LEGNANO (MILANO), ITALY, Grade: 100/100 *with honors*

VISITING APPOINTMENTS

June 2017

Visiting professor at ELEC, Vrije Universiteit Brussels, Belgium

April–May 2017

Visiting professor at GIPSA-Lab, Université Grenoble Alpes, France

September–November 2015, May–July 2016

Visiting professor at Dipartimento di Scienze e Metodi dell'Ingegneria, University of Modena and Reggio Emilia (UNIMORE), Italy

May 2015, June 2016

Visiting researcher at Department of Automatic Control, KTH Stockholm, Sweden

November 2012, September 2013

Visiting researcher at the Department of Electrical Engineering, TU Eindhoven, The Netherlands

June 2012, April 2015

Visiting researcher at the Laboratoire d'Analyse et d'Architecture des Systèmes, CNRS Toulouse, France

July 2010, January 2011, August 2011

Visiting scholar at the Laboratoire d'Automatique, EPFL Lausanne, Switzerland

March 2010

Visiting scholar at the Delft Center for Systems and Control, TU Delft, The Netherlands

January 2009 – March 2013

Visiting scholar (5 months during the Ph.D. program + several short-term stays) at the Institute for Design and Control of Mechatronic Systems, JKU Linz, Austria

RESEARCH ACTIVITY

1. Direct data-driven control system design

For many industrial applications, finding a model from physical laws that is both simple and reliable for control design is a tough undertaking. When a set of measurements is available, the control law can be computed from data without relying on knowledge of the underlying physics. Specifically, in “indirect” data-driven approaches, a model of the system is first derived from data and then a controller is computed based on such a model. In “direct” data-driven approaches, the controller is directly derived from experimental data, such that process dynamics are automatically considered relevant or not, depending only on their weight on the final control index. The main advantages of such techniques are that they are insensitive to modeling errors and less time-consuming.

The first aim of this research work is to develop mathematical tools so as to extend existing data-driven methods to a larger class of industrially relevant problems. These methodological extensions include

- extensions to system identification approaches [CS1, CS3, CS4] (in collaboration with Università degli studi di Brescia)
- direct data-driven control of time-delay systems [J1, C1] (in collaboration with JKU);
- mixed-sensitivity loop-shaping control design [J7, C11] (in collaboration with EPFL);
- data-driven control in the frequency domain [C57] (in collaboration with ONERA);
- controller identification using closed-loop experiments [C19] (in collaboration with JKU);
- data-driven control of non-minimum phase plants [C50];
- one-shot tuning of cascade schemes [C10];
- PID tuning using deterministic VRFT [C34] (in collaboration with Università degli studi di Brescia);
- data-driven control of MIMO plants [J2, C7, C40] (in collaboration with JKU Linz and TU Eindhoven);
- data-driven control of LPV systems [J17, C12, C18, C28, C41] (in collaboration with TU Eindhoven and IMT Lucca);
- direct data-driven feed-forward linearization [J4, C6] (in collaboration with TU Delft).
- robustification of data-driven tuning [J26, C51];

- data-driven control of nonlinear systems [C39, C44, J21, C55, JS3] (in collaboration with Politecnico di Torino).

Furthermore, since it is common belief that finding a good model of the plant is always the best way towards controller design, a secondary goal of this activity is to provide a quantitative assessment of direct data-driven techniques and show whether - and in which cases - they might be preferable (see [J14, C23]).

Finally, since it can be proven that the weak point of direct data-driven methods is their statistical performance, a third aim of this activity is to find mathematical solutions to improve the overall efficiency of the controller estimate. From this perspective, two directions are addressed, namely

- optimal experiment design [J6, C2, C17, B2, JS6] (in collaboration with EPFL, KTH and JKU Linz);
- L_2 regularization [J10, C20] (in collaboration with EPFL).

2. Intelligent vehicles and transportation systems

Nowadays, vehicle systems are definitely among the most challenging platforms for research in automatic control. As a matter of fact, almost all categories of vehicles are now equipped with sophisticated sensors and electronic control units able to process the available information on engine and vehicle dynamics. It follows that this information can be exploited to act on the vehicle, *e.g.*, to increase the level of safety, decrease the fuel consumption, deal with environmental constraints. Moreover, “smart vehicles” can be used to communicate among each other towards the establishment of “smart cities” with sustainable transports and optimized traffic flows. In this interesting field, the research activity is specifically focused on:

- NO_x and exhaust manifold pressure estimation via in-cylinder pressure measurement [J9, J15, J3, J5, C16] (in collaboration with JKU and Liebherr GmbH);
- longitudinal and lateral motorcycle dynamics, *e.g.* traction, braking and stability control [P1, B1, C9, C3, C13, C30] (partially in collaboration with TU Delft and Aprilia SpA);
- Diesel engine control [J15, J11, C14] (in collaboration with JKU);
- design of electric and hybrid powertrains [C15, C5, C4, J19, J23, C32, C43, C42, C54, C37] (in collaboration with RSE SpA, Italianmoto Srl, EP Tender Sas, Blubrake Srl and Zehus Srl);
- vehicle sharing systems and green mobility [J12, C26, C38, C59, P2];
- design and control of Brake-By-Wire (BBW) systems [J20, C30];
- Control of unmanned rotorcrafts [C8, C24, C45, C48];
- Marine vehicle technology [J8, C22, J18];

3. Other research activities (with at least one publication)

- Anti-windup systems [J24, C27, C29, C36] (in collaboration with LAAS CNRS Toulouse, IEIIT CNR Torino and Università degli studi di Trento)
- Kalman filtering [C33]
- Robotics and mechatronics [C35, J13, C25, C31, J22, C52, C53, C58, JS4]
- Business analytics and finance [C56, CS2]

TEACHING ACTIVITY

Lecturer

Course:	Control-oriented identification (in English) Ph.D. course
Academic Year:	2016/2017
Class Hours per Year:	8
University:	Vrije Universiteit Brussels

- Course: Identification for control (in English)
Ph.D. course
- Academic Year: 2016/2017
- Class Hours per Year: 6
- University: Université Grenoble Alpes
- Course: Data-driven control system design (in English)
Ph.D. course
- Academic Year: 2014/2015 - 2016/2017
- Class Hours per Year: 20 - 20
- University: Politecnico di Milano
- Course: Optimal filtering and data analysis: from Kolmogorov-Wiener to Kalman
(in English, co-taught with S. Bittanti, P. Bolzern, M. Farina, S. Garatti,
G. De Nicolao, M. Prandini, S.M. Savaresi)
Ph.D. course
- Academic Year: 2015/2016
- Class Hours per Year: 3
- University: Politecnico di Milano
- Course: Advanced data-driven methods for modeling and control (in English)
Ph.D. course
- Academic Year: 2014/2015
- Class Hours per Year: 20
- University: Università degli studi di Bergamo
- Course: Fundamentals of Automatic Control (in Italian)
B.Sc. course
- Academic Year: 2016/2017
- Class Hours per Year: 42
- University: Politecnico di Milano
- Course: Modeling, Identification and Simulation (in Italian)
Post-graduate Master program in Adaptive Manufacturing
- Academic Year: 2014/2015 - 2015/2016
- Class Hours per Year: 30 - 50
- University: Università di Modena e Reggio Emilia (UNIMORE)
- Course: Model Identification and Data Analysis (in Italian)
M.Sc. course
- Academic Year: 2012/2013 - 2013/2014 - 2014/2015 - 2015/2016 - 2016/2017
- Class Hours per Year: 60 - 60 - 48 - 48 - 48
- University: Università degli studi di Bergamo
- Course: Model Identification and Data Analysis (in English)
M.Sc. course
- Academic Year: 2013/2014 - 2014/2015 - 2015/2016 - 2016/2017
- Class Hours per Year: 32 - 32 - 30 - 30
- University: Politecnico di Milano
- Course: Model Identification and Adaptive Systems (in English)
M.Sc. course
- Academic Year: 2012/2013
- Class Hours per Year: 30
- University: Politecnico di Milano

Tutorial Classes

Course:	Fundamentals of Automatic Control (in Italian) B.Sc. Course – Teacher: Prof. P. Bolzern
Academic Year:	2015/2016
Class Hours per Year:	6
University:	Politecnico di Milano
Course:	Model Identification and Data Analysis II (in Italian) M.Sc. course – Teacher: Prof. S. Bittanti
Academic Year:	2013/2014
Class Hours per Year:	20
University:	Politecnico di Milano
Course:	Model Identification and Data Analysis (in Italian) M.Sc. Course – Teacher: Prof. S. Bittanti
Academic Year:	2012/2013 - 2014/2015 - 2015/2016
Class Hours per Year:	20 - 20 - 20
University:	Politecnico di Milano
Course:	Model Identification and Data Analysis (in English) M.Sc. Course – Teacher: Prof. S.M. Savaresi
Academic Year:	2012/2013
Class Hours per Year:	20
University:	Politecnico di Milano
Course:	Automatic Control (in Italian) M.Sc. Course – Teacher: Prof. N. Schiavoni
Academic Year:	2009/2010 - 2010/2011
Class Hours per Year:	37 - 34
University:	Politecnico di Milano
Course:	Model Identification and Data Mining (for Biomedical Engineering, in Italian) M.Sc. Course – Teacher: Prof. S.M. Savaresi
Academic Year:	2009/2010 - 2010/2011 - 2014/2015
Class Hours per Year:	28 - 12 - 28
University:	Politecnico di Milano
Course:	Advanced process control (in Italian until 2014/2015, then in English) M.Sc. Course – Teacher: Prof. F. Casella
Academic Year:	2008/2009 - 2009/2010 - 2010/2011 - 2012/2013 - 2014/2015 - 2015/2016
Class Hours per Year:	8 - 6 - 6 - 8 - 6 - 4
University:	Politecnico di Milano

Theses Advisor or Co-Advisor

- *Stock trading via feedback control: an extremum seeking approach (in English)* - M.Sc. program in Management Engineering, Politecnico di Milano. Student: C. Cantaro. **Unique advisor.** Academic Year 2015-2016.
- *Identificazione semi-supervisionata di modelli NFIR (in Italian)* - M.Sc. program in Computer Science and Engineering, Università degli Studi di Bergamo. Student: M. Scandella. Academic Year 2015-2016.
- *Analisi e sviluppo di un sistema di monitoraggio della pressione pneumatici per veicoli a due ruote (in Italian)* - M.Sc. program in Automation Engineering, Politecnico di Milano. Student: S. Della Pietra. Academic Year 2015-2016.

- *Optimal energy management of series hybrid electric vehicles* - Ph.D. program in Information Technology, Politecnico di Milano. Student: J. Guanetti. Politecnico di Milano, December 2015.
- *Il filtro particellare per la diagnostica dei guasti in ambito aerospaziale (in Italian)* - M.Sc. program in Computer Science and Engineering, Università degli Studi di Bergamo. Student: G. Maroni. Academic Year 2014-2015.
- *Analisi e sviluppo di un sensore virtuale della pressione dei pneumatici per veicoli stradali (in Italian)* - M.Sc. program in Automation Engineering, Politecnico di Milano. Student: L. Onesto. Academic Year 2014-2015.
- *Analisi e sviluppo di un sistema per la valutazione dello stile di guida nei trattori agricoli (in Italian)* - M.Sc. program in Automation Engineering, Politecnico di Milano. Student: R. Tasseti. Academic Year 2014-2015.
- *Controllo MIMO D^2 -IBC: teoria e applicazione al controllo di stabilità di un autoveicolo a guida autonoma (in Italian)* - M.Sc. program in Automation Engineering, Politecnico di Milano. Student: O. Galluppi. Academic Year 2014-2015.
- *Modelli dinamici per l'interpretazione e la predizione di dati di ascolto televisivo (in Italian)* - M.Sc. program in Computer Science and Engineering, Politecnico di Milano. Student: A. Mosconi. Academic Year 2013-2014.
- *Approcci data-based diretti per il progetto di controllori robusti con applicazione in ambito automotive (in Italian)* - M.Sc. program in Automation Engineering, Politecnico di Milano. Student: M. Vanoncini. Academic Year 2013-2014.
- *Algoritmi real-time per l'ottimizzazione della velocità di una barca a vela (in Italian)* - M.Sc. program in Automation Engineering, Politecnico di Milano. Student: A. Testa. Academic Year 2013-2014.
- *Analisi dinamica di devices di rete: modellistica e predizione (in Italian)* - M.Sc. program in Automation Engineering, Politecnico di Milano. Students: P. Giambi and E. Zappella. Academic Year 2012-2013.
- *Modellistica di un electric power steering e sviluppo di algoritmi per la riduzione della coppia di cogging (in Italian)* - M.Sc. program in Automation Engineering, Politecnico di Milano. Student: M. Martines. Academic Year 2011-2012.
- *Analisi, sviluppo e ottimizzazione energetica del sistema elettronico di controllo di uno scooter elettrico (in Italian)* - M.Sc. program in Electronic Engineering, Politecnico di Milano. Students: M. Bongiorno, C. Rainato. Academic Year 2009-2010.
- *Progetto e analisi di efficienza di un azionamento per motore brushless di una bicicletta a pedalata assistita (in Italian)* - M.Sc. program in Electronic Engineering, Politecnico di Milano. Student: L. Visconti. Academic Year 2008-2009.

Mathematics and Physics Tutor

- Individually tutored high school students in Mathematics and Physics - Period: 2002-2008

INDUSTRIAL COLLABORATIONS

- *GPS and inertial measurement based speed and heading estimation in boats*, within a research contract between Politecnico di Milano and Astrayacht Srl (Monfalcone - GO, Italy) - 2017.

- *Data-based techniques for the prediction of a vehicle residual value*, within a research contract between Politecnico di Milano, E-Novia Srl and Fiat Chrysler Automobiles Spa (Torino, Italy) - 2017.
- *Mixed cost/noise optimization for extended range electric vehicles*, within a research contract between Politecnico di Milano and Steyr Motors GmbH (Steyr, Austria) - 2017.
- *Black-box vehicle modeling for sideslip angle estimation*, within a research contract between Politecnico di Milano and Ferrari Spa (Maranello - MO, Italy) - 2017.
- *Data-driven mass estimation in tilting vehicles*, within a research contract between Politecnico di Milano and Piaggio Spa (Pontedera - PI, Italy) - 2017.
- *Clamping force estimation in brake-by-wire actuators*, within a research contract between Politecnico di Milano and Brembo Spa (Curno - BG, Italy) - 2017.
- *Automatic calibration of power-meters for high performance bikes*, within a research contract between Politecnico di Milano and Favero Electronics Srl (Arcade - TV, Italy) - 2016.
- *Clamping force estimation in electric parking brakes*, within a research contract between Politecnico di Milano and Brembo Spa (Curno - BG, Italy) - 2016.
- *Indirect TPMS for two-wheeled vehicles*, within a research contract between Politecnico di Milano and Ducati Spa (Borgo Panigale - BO, Italy) - 2016.
- *Driving style estimation in tractors*, within a research contract between Politecnico di Milano, E-Novia Srl and Argo Tractors Spa (Fabbrico - RE, Italy) - 2015/2016.
- *Advanced business analytics with system identification techniques*, within a research contract between Politecnico di Milano, E-Novia Srl and Pastificio Rana Spa (Verona - Italy) - 2015.
- *Indirect and hybrid TPMS via advanced estimation techniques*, within a research contract between Politecnico di Milano and Maserati Spa (Modena, Italy) - 2014/2015.
- *Automatic MOB (Man On Board) recovery*, within a research contract between Politecnico di Milano and Blupassion Srl (Santa Maria la Longa - UD, Italy) - 2014.
- *Energy optimization for extended range electric vehicles*, within a research contract between Politecnico di Milano and EP Tender Sas (Poissy Cedex, France) - 2013/2014.
- *Feedback control of gravimetric blenders for polymer processes*, within a research contract between Università degli studi di Bergamo and Doteco Spa (Mirandola - MO, Italy) - 2013.
- *Data-driven corrections of wind sensor errors in sailboats*, within a research contract between Politecnico di Milano and Astrayacht Srl (Monfalcone - GO, Italy) - 2013.
- *Data-driven emission modeling for Diesel engines*, within a research contract between Johannes Kepler University of Linz and Liebherr GmbH (Linz, Austria) - 2011.
- *Innovative control algorithms for lightweight electric vehicles*, within a research contract between Politecnico di Milano and Italianimoto Srl (Osio Sopra - BG, Italy) - 2009/2010.
- *Traction control for drive-by-wire applications in racing motorbikes*, within a research contract between Politecnico di Milano and Aprilia Spa (Noale - VE, Italy) - 2008.

GRANTS AND CONTRACTS

- *GPS and inertial measurement based speed and heading estimation in boats*, between Politecnico di Milano and Astrayacht Srl (Monfalcone - GO, Italy), funding: 15k€, 2017
- 2017 one-month visiting fellowship at Université Grenoble Alpes, France (1st ranked)

PARTICIPATION IN REGIONAL, NATIONAL AND INTERNATIONAL RESEARCH PROJECTS

- *i-Share*
Period: 11/2016-4/2018
Partners: E-novia Spa, Zed Milano Srl, Politecnico di Milano
Funded by: Regione Lombardia
- *Adaptive Suspension Control for Bicycle*
Period: 7/2016-12/2017
Partners: E-shock Srl, Bertone Design Srl, Politecnico di Milano
Funded by: Regione Lombardia (Smart Fashion and Design call)
- *New methods for Identification and Adaptive Control for Industrial Systems*
Period: 1/2009-12/2011
Partner: Politecnico di Milano
Funded by: MIUR (Italian Ministry for University and Research)
- *Methods and tools of self-optimizing control of complex mechatronical systems*
Period: 1/2009-12/2011
Partners: Johannes Kepler University of Linz, Politecnico di Milano, Imperial College London, Katholieke Universiteit Leuven.
Funded by: ACCM (Austrian Center of Competence in Mechatronics)

PARTECIPATION IN SCIENTIFIC EVENTS

Committees

- Member of the international program committee of the 18th IFAC Symposium on System Identification (SYSID), Stockholm, Sweden, July 9-11, 2018.
- Member of the international program committees of the 9th IFAC/IEEE Symposium on Robust Control Design (ROCOND) and the 2nd IFAC Workshop on Linear Parameter Varying Systems (LPVS), to be held jointly in Florianópolis, Brasil, September 3-5, 2018.
- Member of the international program committee of the 1st IFAC workshop on Linear Parameter Varying Systems (LPVS), Grenoble, France, September 7-9, 2015.
- Member of the national program committee of the Annual Conference of the Italian Society of Teachers and Researchers in Automatic Control (S.I.D.R.A.), Bergamo, Italy, September 8-10, 2014.

Attendance to international conferences/workshops

- "55th IEEE Conference on Decision and Control", Las Vegas, NV, USA, December 12-14, 2016.
- "24th ERNSI Workshop", Cison di Valmarino, Italy, September 25-28, 2016.
- "17th IFAC Symposium on System Identification", Beijing, China, October 19-21, 2015.
- "1st IFAC Workshop on Linear Parameter Varying Systems", Grenoble, France, October 7-9, 2015.
- "53rd IEEE Conference on Decision and Control", Los Angeles, CA, USA, December 15-17, 2014.
- "22nd ERNSI Workshop", Ostend, Belgium, September 21-24, 2014.
- "19th IFAC World Congress", Cape Town, South Africa, August 25-29, 2014.
- "52nd IEEE Conference on Decision and Control", Firenze, Italy, December 10-13, 2013.
- "ASME Dynamic Systems and Control Conference 2013", Stanford, CA, USA, October 21-23, 2013.
- "12th European Control Conference 2013", Zurich, Switzerland, July 17-19, 2013.
- "16th IFAC Symposium on System Identification", Brussels, Belgium, July 11-13, 2012.
- "50th IEEE Conference on Decision and Control", Orlando, FL, USA, December 12-15, 2011.
- "18th IFAC World Congress", Milano, Italy, August 28 - September 2, 2011.
- "49th IEEE Conference on Decision and Control", Atlanta, GA, USA, December 13-15, 2010.
- "8th IFAC Symposium on Nonlinear Control Systems", Bologna, Italy, September 1-3, 2010.

Attendance to national conferences/workshops

- Annual Conference of the Italian Society of Teachers and Researchers in Automatic Control (S.I.D.R.A.), Bergamo, Italy, September 8-10, 2014.

- Annual Conference of the Italian Society of Teachers and Researchers in Automatic Control (S.I.D.R.A.), Palermo, Italy, September 16-18, 2013.
- Annual Conference of the Italian Society of Teachers and Researchers in Automatic Control (S.I.D.R.A.), Benevento, Italy, September 12-14, 2012.
- Annual Conference of the Italian Society of Teachers and Researchers in Automatic Control (S.I.D.R.A.), L'Aquila, Italy, September 13-15, 2010.

EDITORIAL ACTIVITY

Editorships

Since 2015, he is an Associate Editor of the Conference Editorial Board of the IEEE Control System Society.

Reviews

Since 2009, he has served as a reviewer for Automatica, IEEE Transactions on Automatic Control, International Journal of Adaptive Control and Signal Processing, Control Engineering Practice, IEEE Transactions on Control Systems Technology and for several IFAC/IEEE conferences.

Memberships

- He is a member of the Institute of Electrical and Electronics Engineers (IEEE) and the Italian Society of Teachers and Researchers in Automatic Control (S.I.D.R.A.).
- He is a member of the following technical committees (TCs): IEEE TC on System Identification and Adaptive Control (TC-SIAC), IFAC TC on Modelling, Identification and Signal Processing, IFAC TC on Robust Control.
- He is the Social Media representative for the IFAC TC on Robust Control.

AWARDS

“Best Young Author Journal Paper Award” of the Italy Chapter of the IEEE Control Systems Society for the paper “Robust Linear Static Anti-Windup With Probabilistic Certificates”. Motivation: *“The paper proposes a novel and promising paradigm for approaching robust static anti-windup design and performance analysis for saturated linear closed loops in the presence of nonlinear probabilistic parameter uncertainties via randomized techniques”*. Milan, Italy **June 2017**

“Technical innovation Prize” for the driving style estimator developed with Argo Tractors Spa at EIMA International Exposition 2016, Bologna, Italy **November 2016**

Best oral presentation award at the Annual Conference of the Italian Society of Teachers and Researchers in Automatic Control (S.I.D.R.A.), Bergamo, Italy **September 2014**

“Famiglia Legnanese” award for best students in AltoMilanese funded by Quaglia & Colombo s.r.l., Legnano, MI (Italy) **December 2008**

INVITED TALKS

- *Robust anti-windup augmentation via randomized optimization.*
GIPSA-Lab, Université Grenoble Alpes, France, May 18, 2017.
- *Direct design of LPV controllers from data.*
Department of Automatic Control, Lund University, Sweden, August 26, 2015.
- *Direct data-driven control of linear parameter-varying systems.*
Dynamical Systems Control and Optimization (DYSCO) research unit, IMT Lucca, Italy, July 08, 2015.
- *Recent results and open issues in direct data-driven control system design*
Department of Automatic Control, KTH Stockholm, Sweden, May 04, 2015.

- *Direct control system design from data: overview and new challenges*
ONERA DCSD, Toulouse, France, April 16, 2015.
- *On robust static anti-windup augmentation with probabilistic certificates*
Laboratoire d'Analyse et d'Architecture des Systèmes, CNRS Toulouse, France, April 14, 2015.
- *Learning controllers from data: overview and new perspectives*
EECS, UC Berkeley, California (USA), October 24, 2013.
- *"To model or not to model": an insight into control system design using experimental data*
Department of Electrical Engineering, TU Eindhoven, The Netherlands, September 11, 2013.
- *A comparison between model-based and data-driven control system design*
Laboratoire d'Automatique, EPFL Lausanne, Switzerland, April 12, 2013.
- *Tuning controllers from data: a statistical perspective*
Laboratoire d'Analyse et d'Architecture des Systèmes, CNRS Toulouse, France, June 12, 2012.

PERSONAL SKILLS, COMPETENCES AND ACTIVITIES

Languages

Italian (Mother tongue), English (C1 level, TOEFL iBT 2008), French (B1 level, DELF 2003)

Computer skills and competences

Operative systems: Windows, Mac OS

Software packages: Office, Matlab, Simulink, BikeSim, CarSim

Programming: C, C++

Sports

Judo Black belt I Dan, Karate V kyu, Ninjitsu I kyu, Swimming, Skiing

Artistic skills and competences

Bass-guitar, organ

Voluntary work

Fellow of the italian association of blood donors (AVIS) since 2002

Driving licence

Car licence (international)

PUBLICATIONS

International Journals

Published/accepted

- [J27] D. Piga, S. FORMENTIN, A. Bemporad
Direct data-driven control of constrained linear systems.
IEEE Transactions on Control Systems Technology. Accepted. DOI: 10.1109/TCST.2017.2702118.
- [J26] S. FORMENTIN, S. Garatti, G. Rallo, S.M. Savaresi
Robust direct data-driven controller tuning with an application to vehicle stability control.
International Journal of Robust and Nonlinear Control. Accepted. DOI: 10.1002/rnc.3782.
- [J25] J. Guanetti, S. FORMENTIN, M. Corno, S.M. Savaresi
Optimal energy management in series hybrid bicycles.
Automatica, vol. 81, pages 96-106, July 2017.

- [J24] S. FORMENTIN, F. Dabbene, R. Tempo, L. Zaccarian, S.M. Savaresi
Robust linear static anti-windup with probabilistic certificates.
IEEE Transactions on Automatic Control, vol. 62, no. 4, pages 1575–1589, April 2017.
- [J23] J. Guanetti, S. FORMENTIN, S.M. Savaresi
Energy management for an electric vehicle with a rental range extender: a least-costly approach.
IEEE Transactions on Intelligent Transportation Systems, vol. 17, no. 11, pages 3022–3034, November 2016.
- [J22] M. Ermidoro, A.L. Cologni, S. FORMENTIN, F. Previdi
Fixed-order gain-scheduling control of overhead bridge cranes.
IFAC Mechatronics, vol. 39, pages 237–247, November 2016.
- [J21] C. Novara, S. FORMENTIN, S. M. Savaresi, M. Milanese
Data-driven design of two degree-of-freedom nonlinear controllers: the D^2 -IBC approach.
Automatica, vol. 72, pages 19–27, October 2016.
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