

# SIMONE FORMENTIN'S CURRICULUM VITAE

UPDATED: FEBRUARY 28, 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  
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*Family status:* Married, father of Luna (born June 16, 2014) and Andrea (born January 8, 2016)  
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## CURRENT POSITION

### October 2016 – Today

Tenure-track Assistant Professor  
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 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

**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

**February 2014**

Visiting researcher at Dipartimento di Ingegneria Industriale, Università degli studi di Trento, Italy

**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 Mechatronical 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

- 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 [N1, 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, R2] (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, B1] (in collaboration with EPFL and JKU Linz);
- $L_2$  regularization [J10, C20] (in collaboration with EPFL).

## 2. Automotive control

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:

- $\text{NO}_x$  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, B2, 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, Italianimoto Srl, EP Tender Sas, Blubrake Srl and Zehus Srl);
- vehicle sharing systems and green mobility [J12, C26, C38, CS1, P2];
- design and control of Brake-By-Wire (BBW) systems [J20, C30];

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

- Control of unmanned rotorcrafts [R1, C8, C24, C45, C48]
- 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]
- Marine vehicle technology [J8, C22, J18]
- Business analytics [C56]

## TEACHING ACTIVITY

### Lecturer

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: Data-driven control system design (in English)

#### Ph.D. course

Academic Year: 2014/2015

Class Hours per Year: 20

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  
 Class Hours per Year: 60 - 60 - 48  
 University: Università degli studi di Bergamo

Course: Model Identification and Data Analysis (in English)  
 M.Sc. course

Academic Year: 2013/2014 - 2014/2015  
 Class Hours per Year: 32 - 32  
 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  
 Class Hours per Year: 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.
- *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. Tassetti. Academic Year 2014-2015.
- *Controllo MIMO D<sup>2</sup>-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

- *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 Italiaimoto 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

- 2017 one-month visiting fellowship at Université Grenoble Alpes, France (1st ranked)

#### PARTICIPATION IN NATIONAL AND INTERNATIONAL RESEARCH PROJECTS

- *New methods for Identification and Adaptive Control for Industrial Systems*  
Period: 2009-2011  
Funded by: MIUR (Italian Ministry for University and Research)
- *Methods and tools of self-optimizing control of complex mechatronical systems*  
Period: 2009-2011  
Partners: Johannes Kepler University of Linz (Austria), Politecnico di Milano (Italy), Imperial College London (GB), Katholieke Universiteit, Leuven (Belgium).  
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 committee of the 9th IFAC/IEEE Symposium on Robust Control Design (ROCOND), 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), the American Society of Mechanical Engineers (ASME) 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: IEEE Technical Committee on System Identification and Adaptive Control (TC-SIAC), IFAC Technical Committee on Modelling, Identification and Signal Processing, IFAC Technical Committee on Robust Control.

- He is the Social Media representative for the IFAC Technical Committee on Robust Control.

## AWARDS

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

**Best 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

- *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. Conditionally accepted.
- [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.
- [J25] J. Guanetti, S. FORMENTIN, M. Corno, S.M. Savaresi  
*Optimal energy management in series hybrid bicycles.*  
Automatica. Accepted.
- [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. Accepted. DOI: 10.1109/TAC.2016.2586606.
- [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. Cogni, 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.
- [J20] F. Todeschini, S. FORMENTIN, G. Panzani, M. Corno, S. M. Savaresi, L. Zaccarian  
*Nonlinear pressure control for BBW systems via dead zone and anti-windup compensation.*  
IEEE Transactions on Control Systems Technology, vol. 24, no. 4, pages 1419–1431, July 2016.
- [J19] S. FORMENTIN, J. Guanetti, S. M. Savaresi  
*Least costly energy management for series hybrid electric vehicles.*  
Control Engineering Practice, vol. 48, pages 37–51, March 2016.
- [J18] M. Corno, S. FORMENTIN, S. M. Savaresi  
*Data-Driven online speed optimization in autonomous sailboats.*  
IEEE Transactions on Intelligent Transportation Systems, vol. 17, no. 3, pages 762–771, March 2016.
- [J17] S. FORMENTIN, D. Piga, R. Tóth, S. M. Savaresi  
*Direct learning of LPV controllers from data.*  
Automatica, vol. 65, no. 1, pages 98–110, March 2016.
- [J16] S. FORMENTIN, C. Novara, S. M. Savaresi, M. Milanese  
*Active braking control system design: the  $D^2$ -IBC approach.*  
IEEE/ASME Transactions on Mechatronics, vol. 20, no. 4, pages 1573–1584, August 2015.
- [J15] C. Benatzky, S. Stadlbauer, S. FORMENTIN, A. Schilling and D. Alberer  
*Indicated Pressure-based Data Driven Diesel Engine  $NO_x$  Modeling.*  
International Journal of Engine Research, vol. 15, no. 8, pages 934–943, December 2014.
- [J14] S. FORMENTIN, K. van Heusden, A. Karimi  
*A comparison of model-based and data-driven controller tuning.*  
International Journal of Adaptive Control and Signal Processing, vol. 28, no. 10, pages 882–897, October 2014.
- [J13] S. FORMENTIN, A. L. Cogni, F. Previdi, S. M. Savaresi  
*A data-driven approach to control of batch processes with an application to a gravimetric blender.*  
IEEE Transactions on Industrial Electronics, vol. 61, no. 11, pages 6383–6390, November 2014.
- [J12] A. G. Bianchessi, G. Cugola, S. FORMENTIN, A. Morzenti, C. Ongini, E. Panigati, M. Rossi, S. M. Savaresi, F. Schreiber, L. Tanca, E. Vannutelli Depoli  
*Green Move: a platform for highly configurable, heterogeneous electric vehicle sharing.*  
IEEE Intelligent Transportation Systems Magazine, vol. 6, no. 3, pages 96–108, October 2014.
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Applicant: E-Novia S.r.l. and Politecnico di Milano  
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**WAIVER**

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