

Matteo Corno

PERSONAL DATA Matteo Corno
Via Ponzio 34/5
20133 Milan, Italy
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CURRENT POSITION *Assistant Professor* **Politecnico di Milano
Milan, Italy
Oct. 1st, 2011 – Present**
Assistant Professor at the Dipartimento di Elettronica, Informazione e Bioingegneria. Full time member of MoVE research group leading projects in the fields of electric vehicles, battery management systems, and vehicle dynamics.

RESEARCH STATEMENT to carry out cutting-edge applied research in the field of innovative vehicle systems. My research is focused on battery modeling and control (mainly applied to vehicle systems), human-electric hybrid vehicles and active vehicle dynamics control.

PROFESSIONAL EXPERIENCE *Assistant Professor* **Delft University of Technology
Delft, the Netherlands
Oct. 15th, 2009 – Nov. 31st, 2011**
Assistant Professor at the Delft Center for Systems and Control in the Faculty of Mechanical, Maritime and Materials Engineering, under the chair of Intelligent Automotive System held by prof. Edward Holweg. I am still involved in teaching and research activities in collaboration with TU Delft.

PostDoc Researcher **Politecnico di Milano
Milan, Italy
Feb. 1st, 2009 – Jul. 31st, 2009**
Lead and carried out individual research on the project named “Design of control systems for two-wheeled vehicles”. In particular focus has been given to the traction control problem, and steering instabilities.

PostDoc Researcher **Johannes Kepler Universitat
Linz, Austria
Jan. 1st, 2009 – Jun. 31st, 2009**
Studied control techniques for emission optimization for automotive Diesel Engines; research carried out in the Institut für Design und Regelung Mechatronischer Systeme. Original appointment was scheduled to end in December 2009; resigned earlier to accept position at TU Delft.

Matteo Corno

Research Specialist

University of Minnesota

Minneapolis, MN, USA

Jul. 1st, 2007 – Nov. 15th, 2007

Studied control techniques for Linear Parameter Varying systems and their application to two wheeled vehicle traction control. Research carried out at the Department of Aerospace and Mechanical Engineering.

Intern

Thales Alenia Space srl

Torino, Italy

Oct. 1st, 2006 – Apr. 30th, 2007

Feasibility study and preliminary development of the attitude control system of an orbiting particle detector.

Consultant Analyst

Ravizza &C srl.

Milan, Italy

Aug. 1st 2005 – Dec. 31st, 2007

Design and coding of an information system for a small company (20 employees). The system is composed of a database (SQL) and a web interface (PHP).

Research Assistant

University of Illinois

Chicago, IL, USA

Jan. 1st, 2004 – May 31st, 2005

Developed and formally analyzed haptic devices and controllers to be used in training tasks. Obtained “Investigator Education Certification” to work with human subjects.

EDUCATION

January 2006 - March 2009

PhD, Information Engineering.

Politecnico di Milano, Milano, Italy.

Major Research Topic: “*Active Stability Control Systems Design for Road Vehicles*”

Advisor: Prof. Sergio M. Savaresi

Minor Research Topic: “*Spacecraft Attitude Estimation and Control*”

Advisor: Prof. Marco Lovera

Final grade: **Laude**

January 2004 - August 2005

M.S., Electrical and Computer Engineering.

University of Illinois, Chicago, IL, USA.

GPA: **3.87/4**

Matteo Corno

September 1999 - October 2005

Laurea (Master's Equivalent), Computer Engineering.

Politecnico di Milano, Milano, Italy.

Dissertation title: "*Haptic Playback: a New Approach to Teaching of Sensori-motor Skills*"

Final grade: **100/100 cum Laude**

September 1994 – July 1999

High School Diploma.

Liceo Scientifico A. Banfi, Vimercate, MI, Italy

Final grade: **100/100**

PRIZES

Best Papers published in Control Engineering Practice for the period 2008-2010 for the paper M. Corno, S. M. Savaresi, M. Tanelli, L. Fabbri. (2008) *On Optimal Motorcycle Braking*. Control Engineering Practice. Vol. 16, No. 6, pp. 644-657. doi:10.1016/j.conengprac.2007.08.001 . ISSN: 0967-0661.

"General Chairs' Recognition Award for Interactive Papers" for the paper Advanced Yaw Control of Four-wheeled Vehicles via Rear Active Differential Braking in interactive session in The Combined 48th IEEE Conference on Decision and Control and 28th Chinese Control Conference.

Best PhD paper finalist with the paper Linear, Parameter-Varying Wheel Slip Control for Two-Wheeled Vehicles. (PhD Day 2008 at the Dipartimento di Elettronica e Informazione)

FUNDED RESEARCH

I have been Principal Investigator of the following funded research projects

Data-driven battery state of health Estimation

Epyon Power

January 2009 – January 2012

Development of a real time data-driven battery state of health estimator for fast charging management and control.

E-SURF, Enhancing vehicles active safety & handling via actively controlled aerodynamic SURFACES

Honda R&D Europe

March 2011 – March 2012

Honda Initiation Grant 2011. Development of an active aerodynamic surface control system to improve vehicle ride and comfort. 30k euro.

DR.AGE: Data dRiven battery AGing modEling

Honda R&D Europe

March 2011 – March 2012

Honda Initiation Grant 2011. Development of a black-box aging model of lithium-ion batteries. 30k euro.

TEACHING
EXPERIENCE

Responsible Instructor **Politecnico di Milano**
Milano, Italy **2012 – Present**
Responsible Instructor for the following Undergraduate Level Courses:
Automatic Control - 10 ETCS

Responsible Instructor **Delft University of Technology**
Delft, the Netherlands **2010 – 2012**
Responsible Instructor for the following Master of Science Courses:
Vehicle Mechatronics - 4 ETCS
Vehicle Dynamics B: Anti Lock Braking Systems - 3 ETCS

Teaching Assistant **Politecnico di Milano**
Milan, Italy **2006 – 2009**
Teaching assistant for the courses:
Robotic Industrial Manipulators - graduate - taught in Italian
Introduction to Automatic Controls - undergraduate - taught in Italian
Model Identification and Adaptive Systems - graduate - taught in English
Vehicle Systems Automatic Controls - graduate - taught in Italian

PhD Students Co-Advisor **Politecnico di Milano and TU**
Milan, Italy **Delft**
September 2010 – Present
Co-Advisor of the following PhD Theses:

- Over-actuated Vehicle Dynamics Control - Donald Selmanaj
- Advanced Control System for Electric Bicycles - Daniele Berretta
- Design and Control of a hydraulic brake-by-wire actuator for Motorcycles - Fabio Todeschini
- Modeling and Control of Narrow Tilting Vehicles - Simone Fiorenti
- Innovative light hybrid electric vehicles: human power integration and optimization and vehicle dynamics control strategies - Pierfrancesco Spagnol
- Force Based Global Chassis Control - Anil Kunnappillil Madhusudhanan
- Global Chassis Control and Braking Control using Tyre Forces Measurement - Mathieu Gerard

Master's Theses Co-Advisor **Politecnico di Milano and TU**
Milan, Italy **Delft**
January 2006 – Present
Advisor of the following Master of Science Theses:

- Modeling, design and control of a remote controlled wheeled vehicle (2013) - poliMI
- Design of a roll-over prevention system for a commuter electric vehicle (2013) - poliMI
- Modeling and Control of a brake-by-wire actuator for sport motorcycles (2013) - poliMI
- Modeling and Control of a Narrow Tilting Vehicle (2013) - poliMI

- Dynamics of over-actuated Wheeled Vehicles (2012) - poliMI
- Identification and Parametrization of Vehicle Models for ESP Design (2012) - TU Delft
- Integrated Powertrain Control for truck with Waste Heat Recovery (2012) - TU Delft
- Analysis and Design of Energy Management Algorithms for a Assisted Bike (2012) - poliMI
- Modeling, Identification and Ageing of Lithium-ion cells (2012) - poliMI
- Optimal Control of Docking of an Automated Bus (2012) - TU Delft
- Load Based Active Suspension Control (2011) - TU Delft
- State Dependent Riccati Equation Optimal Vehicle Dynamics Control (2011) - TU Delft
- Model-Based Estimation of State of Charge of Lithium Cells (2011) - TU Delft
- Design and implementation of a load based ABS control algorithm (2010) - TU Delft
- Data-driven battery state of health Estimation (2010) - TU Delft
- ABS system on modern vehicles equipped with regenerative braking design issues (2010) - TU Delft
- Analysis and Design of a Cornering-Optimal Traction Control System for Two-Wheeled Vehicles (2009) - poliMI
- Analysis and Design of a Semi-Active Steering Damper for Two-Wheeled Vehicles (2008) - poliMI
- Analysis and Design of a Traction Control System for Two-Wheeled Vehicles (2008) - poliMI
- Analysis and Design of an Active Lateral Drift Compensator for Four-Wheeled Vehicles (2008) - poliMI
- Analysis and Design of a Electronic Throttle Body Control System for Racing Motorcycles (two projects: 2007-2008) - poliMI
- Analysis and Simulation of a Gasoline Common Rail Injection System (2006) - poliMI

INVITED SPEECHES

- *Linear Parameter-Varying System Identification: the Subspace Approach.* 1st International Workshop on Identification in Automotive. Linz, Austria. July 15-16, 2010
- *Semi-active steering damper control in two-wheeled vehicles.* TU Delft. Delft, the Netherlands. February 2, 2009.
- *Closed loop identification of MIMO Hammerstein-Wiener models.* Opportunities for System Identification in Engine Modeling. KTH Stockholm, Sweden. March 17, 2010

OTHER
ACTIVITIES

Reviewer for the following International Journals: {Automatica, Transaction of Control System Technologies, International Journal of Robust and Nonlinear Control, Control Engineering Practice, Transactions on Intelligent Transportation Systems}.

Reviewer for several conferences in the Systems and Control community

Faculty Advisor for the automotive student teams at Delft Technical University. Provided supervision during the transition from gasoline powered car to electric car for the Formula Student team and provided supervision for the vehicle dynamics control program of Green Forze team (Hydrogen powered cart).

Participated to the organization of three editions of the Politecnico di Milano "open days" for perspective undergraduate and graduate students, and two editions of a similar initiative at TU Delft.

SCIENTIFIC
PUBLICATIONS

My publications are currently divided in eleven **(22)** papers on International Journals, twenty-one **(31)** papers on proceedings of International Conferences, four **(7)** filed Patents.

PUBLICATIONS ON
INTERNATIONAL
JOURNALS

M. Corno (2013) *Design, Analysis, and Validation of a Haptic-Based Driver Support System for Traction Control*. IEEE Transactions on Intelligent Transportation Systems. (to appear)

S. Formentin, M. Corno, D. Alberer, C. Benatzky, S. M. Savaresi (2013) *Diesel engine NO_x-estimation via in-cylinder pressure measurement* IEEE Transactions on Control Systems Technology (available online)

P. De Filippi, M. Tanelli, M. Corno, S. M. Savaresi and M. D. Santucci (2013) *Electronic Stability Control for Two-Wheeled Vehicles* IEEE Transactions on Control Systems Technology, (to appear online)

M. Corno, G. Panzani, S.M. Savaresi. (2013) *Traction-Control-Oriented State Estimation for Motorcycles* IEEE Transactions on Control Systems Technology, (to appear online)

G. Panzani, M. Corno, S. M. Savaresi (2013), *On adaptive electronic throttle control for sport motorcycles*, Control Engineering Practice, Volume 21, Issue 1, January 2013, Pages 42-53.

A. Mohsen, M. Corno. D. Katzourakis, A. Ghaffari, R. Kasemi (2011) *A Robust Steering Assistance System for Road Departure Avoidance*. IEEE Transactions on Vehicular Technology (to appear).

R. Toth; M. Lovera; P.S. Heuberger, M. Corno, P.M.J. Van den Hof (2011) *On the Discretization of Linear Fractional Representations of LPV Systems* IEEE Transactions on Control Systems Technology, (available online)

S. Formentin, M. Corno, S.M. Savaresi and L. Del Re (2011) *Direct data-driven control of linear time-delay systems* Asian Journal of Control (available online)

M. Alirezaei, M. Corno, A Ghaffari, and R Kazemi. (2011) *A new approach to the design of coordinated road departure avoidance systems* Proceedings of the IMechE, Part K: Journal of Multi-body Dynamics. September 29, 2011. Preprints available online.

M. Corno, M. Gerard, M. Verhaegen, E. Holweg (2011) *Hybrid ABS Control Using Force Measurement* IEEE Transactions on Control Systems Technology. vol.PP, no.99, pp.1-13, 0. Available online.

P. De Filippi, M. Tanelli, M. Corno, S.M Savaresi, L. Fabbri, *Semi-Active Steering Damper Control in Two-Wheeled Vehicles* Control Systems Technology, IEEE Transactions on , vol.19, no.5, pp.1003-1020, Sept. 2011.

M. Corno, M. Tanelli, S. M. Savaresi, L. Fabbri, L. Nardo. (2010) *Design and Validation of a Gain-Scheduled Controller for the Electronic Throttle Body in Ride-by-Wire Racing Motorcycles*. IEEE Transactions on Control Systems Technology (to appear).

P. De Filippi, M. Tanelli, M. Corno, S.M. Savaresi, L. Fabbri (2010) *Semi-active steering damper control in two-wheeled vehicle*. IEEE Transactions on Control Systems Technology (to appear).

M. Corno, S. M. Savaresi. (2010) *Experimental Identification of Engine-to-Slip Dynamics for Traction Control Applications in a Sport Motorbike*. European Journal of Control 2010, vol. 16, no 1, pp. 88-108.

C. Vecchio, M. Tanelli, M. Corno, A. Ferrara, S. M. Savaresi. (2009) *Traction Control for Ride-by-Wire Sport Motorcycles: a Second Order Sliding Mode Approach*. IEEE Transactions on Industrial Electronics vol.56, no.9, pp.3347-3356, Sept. 2009. doi: 10.1109/TIE.2009.2018430. ISSN: 0278-0046.

M. Corno, S.M. Savaresi, G.J. Balas. (2008) *On Linear Parameter Varying (LPV) Slip-Controller Design for Two-Wheeled Vehicles*. International Journal of Robust and Nonlinear Control. International Journal of Robust and Nonlinear Control. vol. 19, no. 12, pages 1313-1336, August 2009. doi: 10.1002/rnc.1381. ISSN: 1099-1239.

M. Corno, S. M. Savaresi, R. Scattolini, E. Comignaghi, M. Sofia, A. Palma, E. Sepe. (2009) *Modeling, Parameter Identification and Dynamics Analysis of a Common Rail Injection System for Gasoline Engines*. International Journal of Vehicle Systems Modelling and Testing. Vol. 4, No.1/2 pp. 17 - 42. ISSN: 1745-6436.

G. Panzani, M. Corno, M. Tanelli, A. Zappavigna, S. M. Savaresi, A. Fortina, S. Campo. (2009) *On-Demand Four-Wheel-Drive Vehicles Design via Central*

Transfer Case Active Control. IEEE Transactions on Intelligent Transportation Systems vol.PP, no.99, pp.1-11, 0. doi: 10.1109/TITS.2010.2055858. ISSN: 1524-9050.

M. Tanelli, M. Corno, I. Boniolo, S. M. Savaresi. (2009) *Active Braking Control of Two-Wheeled Vehicles on Curves*. International Journal of Vehicle Autonomous Systems, vol, 7, no 3-4 / 2009, pp. 243 269. doi: 10.1504/IJ-VAS.2009.033263. ISSN: 1471-0226

M. Corno, M. Lovera. (2008) *Spacecraft Attitude Dynamics and Control in the Presence of Large Magnetic Residuals*. Control Engineering Practice Vol. 17, No. 4, April 2009, Pages 456-468. doi: doi:10.1016/j.conengprac.2008.09.010. ISSN: 0967-0661.

M. Corno, S. M. Savaresi, M. Tanelli, L. Fabbri. (2008) *On Optimal Motorcycle Braking*. Control Engineering Practice. Vol. 16, No. 6, pp. 644-657. doi:10.1016/j.conengprac.2007.08.001 . ISSN: 0967-0661.

M. Corno, L. Fabbri, L. Nardo S. M. Savaresi, M. Tanelli. (2007) *Braking Optimal Maneuver: the Role of Front and Rear Tires in a Sport Motorbike*. Tire Technology International Review 2007, 2007, pp. 40-46.

BOOK CHAPTERS Matteo Corno, Jan-Willem van Wingerden and Michel Verhaegen (2012). Linear Parameter-Varying System Identification: the Subspace Approach. In Identification for Automotive Systems, Daniel Alberer and Greg Steward (Eds.), Springer (2012, XVI, 356 p. 172 illus., 129 in color).

PUBLICATIONS ON INTERNATIONAL CONFERENCES P. Spagnol, M. Corno, R. Mura and S. M. Savaresi (2013) *Self-sustaining Strategy for a Hybrid Electric Bike Proceedings of the 2013 IEEE American Control Conference. Washington DC. June 17-19, 2013. pp 6445 - 6450*.

M. Corno (2013). A Haptic-Based Traction Control System. Proceedings of the 2013 IEEE American Control Conference. Washington DC. June 17-19, 2013. pp 6445 - 6450.

M.Corno, S.M. Savaresi (2013) *A Diffusive Electro-Equivalent Li-ion Battery Model*. Proceeding of the 2013 IEEE international conference on circuits and systems. Beijing, China May 19 -23 2013. pp 2976 - 2979

M. Corno, N. Bhatt and M. Verhaegen (2012) *Efficient Control Oriented Modeling of Lithium Ion Cells*. Proceedings of the 2012 American Control Conference. Montreal, Canada, June 27 June 29 pp. 4733-4738

A. K. Madhusudhanan, M. Corno, B. Bonsen and E. Holweg E. (2012) *Solving Algebraic Riccati Equation Real Time for Integrated Vehicle Dynamics Control*. Proceedings of the 2012 American Control Conference. Montreal, Canda, June 27 June 29 pp. 3593-3598

M. Gerard, M. Corno, Michel Verhaegen, E. Holweg (2011). *Force Based ABS Control Using Lateral Force Measurement*. Proceeding of the 2011 Dynamic Systems and Control Conference. Paper no. DSCC2011-5939 pp. 831-837

M. Alirezaei, M. Corno, A. Ghaffari, R. Kazemi (2011). *Robust Road Departure Avoidance Based on Driver Decision Estimation* Proceeding of the 18th IFAC World Congress (IFAC WC 2011), Milan, Italy, August 28 - September 2 2011, pp. 8427-8432.

G. Panzani, M. Corno, S. M. Savaresi, (2011) *Design of an Adaptive Throttle-by-Wire Control System for a Sport Motorbike* Proceeding of the 18th IFAC World Congress (IFAC WC 2011), Milan, Italy, August 28 - September 2 2011, pp. 638-643

D. Katzourakis, M. Alirezaei, J. C. F. de Winter, M. Corno, R. Happee, A. Ghaffari, R. Kazemi (2011), *Shared Control for Road Departure Prevention* Proceeding of the IEEE System, Man and Cybernetics Conference, Alaska 2011. pp 4785-4790.

P. De Filippi, M. Tanelli, M. Corno, S.M. Savaresi (2011) *Enhancing active safety of two-wheeled vehicles via electronic stability control*. Proceeding of the 18th IFAC World Congress (IFAC WC 2011), Milan, Italy, August 28 - September 2 2011, pp. 638-643.

S. Formentin, M. Corno, S.M. Savaresi, L. Del Re, *Virtual Reference Feedback Tuning of Internal Model Controllers*. Proceedings of the 49th IEEE Conference on Decision and Control (to appear)

M. Corno, M. Massaro, R. Lot, S.M. Savaresi *On Linear-Parameter-Varying Roll Angle Controller design for Two-Wheeled Vehicles*. Bicycle and Motorcycle Dynamics 2010 Symposium on the Dynamics and Control of Single Track Vehicles, Delft, The Netherlands . ISBN: 978 94911 04015.

P. De Filippi, M. Tanelli, M. Corno., S.M. Savaresi, L. Fabbri (2010) *Design of steering angle observers for the active control of two-wheeled vehicles*. Proceedings of the 2010 IEEE Multi-Conference on Systems and Control (MSC 2010), Yokohama, Japan, September 8-10 2010, pp. 155-160.

E. de Bruijn, M. Corno, M. Gerard, M. Verhaegen and E. Holweg (2010) *On the performance increase of wheel deceleration control through force sensing*. . Proceedings of the 2010 IEEE Multi-Conference on Systems and Control (MSC 2010), Yokohama, Japan, September 8-10 2010, pp. 161-166.

P. De Filippi, M. Tanelli, M. Corno, S.M. Savaresi (2010) *Toward Electronic Stability Control for Two-Wheeled Vehicles*. Proceedings of the 2010 ASME Dynamic Systems and Control Conference (DSCC 2010), Boston, MA, USA, September 13-15, 2010. in MoBT3.2.

M. Gerard, M. Corno, M. Verhaegen, E. Holweg (2010) *Two-phase Anti-lock Braking System using Force Measurement*. Proceedings of the 10th International Symposium on Advanced Vehicle Control. Loughborough, UK. August 22-26 2010. in AVON.

P. De Filippi, M. Tanelli, M. Corno, S.M. Savaresi, L. Fabbri (2010) *Design of semi-active steering damper control strategies for sport motorcycles*. Proceedings of the 2010 IFAC Symposium on Advances in Automotive Control. Munich, Germany. July 12-14, 2010. In WA2.3.

M. Corno, M. Tanelli, I. Boniolo, S. M. Savaresi. (2009) *Advanced Yaw Control of Four-wheeled Vehicles via Rear Active Differential Braking*. Proceedings of the 48th IEEE Conference on Decision and Control, 2009 held jointly with the 2009 28th Chinese Control Conference. CDC/CCC 2009, pp.5176-5181, 15-18 Dec. 2009 doi: 10.1109/CDC.2009.5399843.

G. Panzani, M. Corno, M. Tanelli, A. Zappavigna, S.M. Savaresi, A. Fortina, S. Campo (2009). *Combined Performance and Stability Optimisation via Central Transfer Case Active Control in Four-Wheeled Vehicles*. . Proceedings of the 48th IEEE Conference on Decision and Control, 2009 held jointly with the 2009 28th Chinese Control Conference. CDC/CCC 2009, 15-18 Dec. 2009. doi: 10.1109/CDC.2009.5400127.

G. Panzani, M. Corno, M. Tanelli, S. M. Savaresi, A. Fortina, S. Campo. (2009) *Control-Oriented Vehicle Attitude Estimation with Online Sensors Bias Compensation*. Proceedings of the 2nd ASME Annual Dynamic Systems and Control Conference (DSCC09), October 1214, 2009 , Hollywood, CA, USA. pp. 819-826. doi:10.1115/DSCC2009-2531. ISBN: 978-0-7918-4892-0.

M. Corno, G. Panzani, G. Maggio, P. Mazzocchi, A. Goggi, S. M. Savaresi. (2009) *Nonlinear Modeling and Control of a Dual-Stage Hybrid Ride-by-Wire Throttle Body for a Sport Motorbike* Proceedings of the 2nd ASME Annual Dynamic Systems and Control Conference (DSCC09), October 1214, 2009. Hollywood, CA, USA. pp. 827-833. doi:10.1115/DSCC2009-2534. ISBN: 978-0-7918-4892-0.

M. Corno, S. M. Savaresi. (2009) *Experimental Identification of Rear Wheel Slip Dynamics of a Motorbike*. Proceedings of the 15th IFAC Symposium on System Identification. Saint-Malo, France July 6-8, 2009. pp. 1229- 1234. doi: 10.3182/20090706-3-FR-2004.00204

M. Tanelli, M. Corno, P. De Filippi, S. Rossi, S.M. Savaresi, L. Fabbri. (2009) *Control-oriented Steering Dynamics Analysis in Sport Motorcycles: Modeling, Identification and Experiments*. Proceedings of the 15th IFAC Symposium on System Identification. Saint-Malo, France July 6-8, 2009. pp. 468-473. doi: 10.3182/20090706-3-FR-2004.00077.

C. Vecchio, M. Tanelli, M. Corno, A. Ferrara, S. M. Savaresi. (2009) *Second*

Order Sliding Mode for Traction Control in Ride-by-Wire Sport Motorcycles. Proceedings of the 2009 American Control Conference. St. Louis, MO, USA. June 10-12, 2009. pp. 3344-3349.

M. Corno, S.M. Savaresi, G.J. Balas (2008). *Linear, Parameter-Varying Wheel Slip Control for Two-Wheeled Vehicles.* Proceedings 47th IEEE Conference on Decision and Control, Cancun, Mexico. December 9-11, 2008. pp.5030-5035. doi: 10.1109/CDC.2008.4738924.

M. Corno, M. Tanelli, S.M. Savaresi, L. Fabbri, L. Nardo (2008). *Electronic Throttle Control for Ride-by-Wire in Sport Motorcycles.* Proceedings of the IEEE Multi-conference on Systems and Control, San Antonio, Texas, USA. September 3-5, 2008. pp. 233-238. doi: 10.1109/CCA.2008.4629640.

M. Corno, M. Lovera. (2008). *Spacecraft Attitude Dynamics and Control in the Presence of Large Magnetic Residuals.* Proceedings of 17th World Congress of International Federation of Automatic Control. Seoul, Korea. July 6-11, 2008. pp. 14054-14059.

M. Corno, E. Comignaghi, A. Palma, E. Sepe, S. M. Savaresi, R. Scattolini, M. Sofia. (2008). *Modeling, Parameter Identification and Dynamics Analysis of a Common Rail Injection Control System for Gasoline Engines.* Proceedings of 17th World Congress of International Federation of Automatic Control. Seoul, Korea. July 6-11, 2008. pp. 8481-8486.

M. Corno, S. M. Savaresi, R. Scattolini. (2008). *Object Oriented Modeling of a Gasoline Direct Injection System.* Object Oriented Modeling of a Gasoline Direct Injection System. Proceedings of 2008 Modelica Conference. Bielefeld, Germany. March 3-4, 2008. pp. 83-91.

M. Corno, M. Tanelli, S. M. Savaresi. (2007) *High Performance Braking for Racing Motorcycles.* Proceedings of the European Control Conference 2007 - ECC 2007 - July 2-5 2007, Kos, Greece, pp. 5225-5232.

M. Corno, M. Zefran. (2006) *Haptic Playback: Modeling, Control Design and Stability Analysis.* Proceedings of the 2nd Robotics: Science and Systems Conference, Philadelphia, USA. August 2006. Available online <http://www.roboticsproceedings.org/rss02/index.html>.

PATENTS

MI2012A000260 (2012) *Bicicletta a pedalata assistita e metodo per il controllo di una bicicletta a pedalata assistita.* (Fabio Previdi, Sergio Savaresi, Matteo Corno, Mara Tanelli, Giovanni Alli, Paolo Lisanti, Pierfrancesco Spagnol, Ivo Boniolo, Cristiano Spelta). Filed on 22/02/2012

10161440.2-2425 (2010). *Method for controlling and electronically adjustable steering damper for a two-wheeled vehicle and apparatus implementing it.* Piaggio & C. S.P.A. e Politecnico di Milano (S.M. Savaresi, M. Tanelli, M. Corno,

P. De Filippi, S. Rossi, C. Spelta, L. Fabbri). Filed on 29/04/2010.

MI2010A 000877 (2010). Italian Patent. *Metodo di controllo della trazione per partenze da fermo in un motoveicolo ed apparato implementante lo stesso*. Piaggio & C. S.p.A, Politecnico di Milano (G. Panzani, M. Corno, S.M. Savaresi, L. Fabbri, A. Ricci, F. Fioravanzo, P.Lisanti). Filed on 17/5/2010.

MI2010A 000878 (2010). Italian Patent. *Metodo per il riconoscimento della impennata e per la gestione della trazione in un motoveicolo*. Piaggio & C. S.p.A, Politecnico di Milano (G. Panzani, M. Corno, S.M. Savaresi, L. Fabbri, A. Ricci, F. Fioravanzo, P. Lisanti). Filed on 17/5/2010.

EP09425332.5 (2009). *System for enhancing cornering performance of a vehicle equipped with a stability control system*. FIAT Group Automobili - Politecnico di Milano (Savaresi Sergio Matteo, Corno Matteo, Natali Nicola, Fortina Andrea, Campo Sebastiano). Filed on 27/08/2009.

MI2009A001013 (2009). Italian Patent. *Sistema e metodo di controllo della trazione in un veicolo a due ruote*. Piaggio & C. S.P.A. e Politecnico di Milano (S.M. Savaresi, M. Corno, S. Formentin, L. Fabbri). Filed on 9/6/2009.

MI2009A000904 (2009). Italian Patent. *Metodo di controllo di un ammortizzatore di sterzo elettronicamente modulabile per un veicolo a due ruote ed apparato implementante lo stesso*. Piaggio & C. S.P.A. e Politecnico di Milano (S.M. Savaresi, M. Tanelli, M. Corno, P. De Filippi, S. Rossi, C. Spelta, L. Fabbri). Filed on 21/5/2009.

THESES

M. Corno. *Active Stability Control Systems Design for Road Vehicles*. Phd Thesis, Politecnico di Milano. January, 2009.

M. Corno. *Haptic Playback: a New Approach to Teaching of Sensorimotor skills*. Master's Thesis, University of Illinois at Chicago. July, 2005.

WAIVER

Authorization to personal data storage according to Italian Law 196/2003.