

MIRKO MAZZOLENI'S CURRICULUM VITAE

UPDATED: 21 JULY 2021

CURRENT POSITION

Assistant professor

October 2019 - Today

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

PREVIOUS POSITIONS

Post-doctoral fellow

March 2018 - October 2019

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

INDUSTRIAL RESEARCH ACTIVITY

R&D Electronic - Software Engineer Internship

February 2014 - August 2014

SAME DEUTZ FAHR GROUP

Developing diagnostic software for ECU in automotive field with the C programming language, using the CAN and UDS protocols. Performing integration and beta testing on the diagnostic functionalities of the machine.

EDUCATION

Ph.D. in Engineering and Applied Sciences

October 2014 - October 2017

UNIVERSITÀ DEGLI STUDI DI BERGAMO, ITALY

Thesis title: "Learning meets control: data analytics for dynamical systems" (in English)

Advisor: Prof. Fabio Previdi, Grade: High

Reviewers: Prof. Michel Verhaegen (TU Delft, The Netherlands), Prof. Simone Garatti (Politecnico di Milano, Italy)

Master of Science in Computer Engineering

September 2011 - March 2014

UNIVERSITÀ DEGLI STUDI DI BERGAMO, ITALY

Thesis title: "Fault detection and isolation for electromechanical actuators in aerospace application using pattern recognition methods" (in English)

Advisor: Prof. Fabio Previdi (in collaboration with UmbraGroup S.p.A.), Grade: *110/110 summa cum laude*

Bachelor of Science in Computer Engineering

September 2009 - December 2011

UNIVERSITÀ DEGLI STUDI DI BERGAMO, ITALY

Thesis title: "Controllo in LabView di un banco motore in CC simulato" (in Italian)

Advisor: Prof. Andrea Cataldo, Grade: *106/110*

VISITING APPOINTMENTS

January-February 2020 - (1 month)

Visiting researcher at Department of Mechanical Engineering - Control Systems Technology, Eindhoven University of Technology (host: Prof. Tom Oomen).

ACADEMIC RESEARCH ACTIVITY

1. Machine learning methods for system identification

In the last decade, a cross-fertilization began between the System Identification and the Statistical Learning communities. This led firstly to the introduction of regularization techniques in system identification, and, more recently, to the application of kernel methods to dynamical systems learning. These ideas immediately became state-of-art approaches for many system identification tasks. Following this rationale, this line of research aims to leverage methodologies born under the machine learning light and employing them for system identification cause. This could also lead to new ideas and rich debate between different researchers. Methodological extensions in this area include:

- Non parametric kernel methods for system identification using semi-supervised techniques [J05] [J02] [C22] [C21] [C19] [C17] [C12] [C11] [C24] [B01];
- Non parametric kernel methods for continuous-time system identification [J06] [CS01];
- Application of machine learning and Gaussian processes [J01] [C02] [C16];
- Other methods [C20] .

2. Fault diagnosis and condition monitoring algorithms

Fault diagnosis is an established field of control systems. However, due to the intrinsic characteristics of the processes being monitored, fault detection and health monitoring methodologies need to be adapted for the particular problem at hand. The aim of this research area is to develop fault detection and condition assessment algorithms for industrial applications, mainly via data-driven or signal-based techniques, drawing from fields such as statistics, machine learning and system identification. This field has nowadays received increased attention under various synonyms such as predictive maintenance, and it is expected to be even more important with the widespread of sensor technologies. The research activity in this area is specifically focused on:

- Fault detection and condition monitoring of electro-mechanical actuators in aerospace environment [B02] [J04], [J03] [C18] [C15] [C14] [C13] [C08] [C07] [C06] [C01];
- Maintenance of industrial machines [C18] [C03] [CS02].

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

- Sentiment analysis [C10];
- Modeling and control of mechanical systems [C05] [C04] [CS23];
- Business analytics [C09].

TEACHING ACTIVITY

Lecturer

Course:	Model Identification and Data Analysis (in Italian)
	M.Sc. course
Academic Year:	2021/2022
Class Hours per Year:	32 - 6 c.f.u.
University:	Università degli Studi di Bergamo
Course:	Data science and automation (in English)
	M.Sc. course
Academic Year:	2021/2022
Class Hours per Year:	32 - 6 c.f.u.
University:	Università degli Studi di Bergamo
Course:	Machine Learning in Advanced Manufacturing (in English)
	Summer school
Academic Year:	2020/2021
School:	China-Italy Lab on Advanced Manufacturing (CI-LAM)
Class Hours:	3
University:	Università degli Studi di Bergamo (virtual)
Course:	Advanced methods for system identification (in English)
	Ph.D. course
Academic Year:	2020/2021
Ph.D. Program:	Engineering and Applied Sciences
Class Hours:	20
University:	Università degli Studi di Bergamo (virtual)
Course:	Forecasting and learning for dynamic decision-making (in English, co-taught with M. Tanelli, S. Formentin, V. Breschi)
	Ph.D. course
Academic Year:	2020/2021
Ph.D. Program:	Data analytics and decision sciences
Class Hours:	1
University:	Politecnico di Milano (virtual)
Course:	Model Identification and Data Analysis (in Italian)
	M.Sc. course
Academic Year:	2020/2021
Class Hours per Year:	48 - 6 c.f.u.
University:	Università degli Studi di Bergamo
Course:	Advanced methods for system identification (in English)
	Ph.D. course
Academic Year:	2019/2020
Ph.D. Program:	Engineering and Applied Sciences
Class Hours:	20
University:	Università degli Studi di Bergamo (virtual)
Course:	Model Identification and Data Analysis (in Italian)
	M.Sc. course
Academic Year:	2019/2020
Class Hours per Year:	48 - 6 c.f.u.
University:	Università degli Studi di Bergamo

Course: Data science and automation (in English)
M.Sc. course
Academic Year: 2019/2020
Class Hours per Year: **32 - 6 c.f.u.**
University: Università degli Studi di Bergamo

Course: Model Identification and Data Analysis (in Italian)
M.Sc. course
Academic Year: 2019/2020
Class Hours per Year: **32 - 6 c.f.u.**
University: Università degli Studi di Bergamo

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M.Sc. course
Academic Year: 2019/2020
Class Hours per Year: **32 - 6 c.f.u.**
University: Università degli Studi di Bergamo

Course: Model Identification and Data Analysis (in Italian)
M.Sc. course
Academic Year: 2018/2019
Class Hours per Year: **48 - 6 c.f.u.**
University: Università degli Studi di Bergamo

Course: Model Identification and Data Analysis (in Italian)
M.Sc. course
Academic Year: 2017/2018
Class Hours per Year: **48 - 6 c.f.u.**
University: Università degli Studi di Bergamo

Tutorial classes

Course: Dynamic system identification (in English)
M.Sc. course - Teacher: Prof. A. Ferramosca
Academic Year: 2020/2021
Class Hours per Year: **12 - 9 c.f.u.**
University: Università degli Studi di Bergamo

Course: Control System Engineering (in Italian)
M.Sc. course - Teacher: Prof. M. Ermidoro
Academic Year: 2016/2017
Class Hours per Year: **12**
University: Università degli Studi di Bergamo

Course: Model Identification and Data Analysis (in Italian)
M.Sc. course - Teacher: Prof. S. Formentin
Academic Year: 2014/2015 - 2015/2016 - 2016/2017
Class Hours per Year: **12 - 12 - 12**
University: Università degli Studi di Bergamo

Industrial classes

Course: Data science (in Italian)
Year: 2021
Class Hours: **24**
Company: SMI group s.p.a.

Course: Predictive maintenance (in Italian)
Year: 2021
Class Hours: **32**
Company: SALF s.p.a.

Course: A practical introduction to Artificial Intelligence (in Italian)
Year: March 2021
Class Hours: **16**
Company: Consorzio TCN s.r.l.

Course: Processing and analysis of experimental data (in Italian)
Year: November 2020
Class Hours: **16**
Company: Consorzio TCN s.r.l and FCA group.

Course: Big data and machine learning (in Italian)
 Year: November 2020
 Class Hours: **24**
 Project: Veneto region project A.G.E.: “Apprendimento, Generazioni, Evoluzione”,
 Cod. Prog.: 2749-0001-1315-2019
 Company: Eduforma s.r.l and A&M Projects s.n.c.

Course: A practical introduction to Artificial Intelligence (in Italian)
 Year: January 2019
 Class Hours: **16**
 Company: Consorzio TCN s.r.l.

Course: A practical introduction to Artificial Intelligence (in Italian)
 Year: January 2019
 Class Hours: **16**
 Company: Consorzio TCN s.r.l.

Ph.D. Theses Advisor or Co-Advisor

- *Preference-based reinforcement learning for control*, Ph.D. program in Engineering and Applied Sciences, Università degli Studi di Bergamo. Student: D. Previtali, October 2019 - October 2022.
- *Design of control methods from nonparametric models*, Ph.D. program in Engineering and Applied Sciences, Università degli Studi di Bergamo. Student: N. Valceschini, October 2019 - October 2022.
- *Regularized kernel-based learning for system identification*, Ph.D. program in Engineering and Applied Sciences, Università degli Studi di Bergamo. Student: M. Scandella, November 2019.
- *Health Monitoring of Electro-Mechanical Actuators for primary flight surfaces*, Ph.D. program in Engineering and Applied Sciences, Università degli Studi di Bergamo. Student: Y. Maccarana, September 2018.

M.Sc. Theses Advisor or Co-Advisor

- *Mixed sensitivity oriented regularization for linear system identification*, M.Sc. program in Management Engineering, Università degli Studi di Bergamo. Students: G. Vedovati. Academic Year: 2020/2021.
- *Progettazione di un metodo di rilevazione dei guasti con approccio data-driven basato su identificazione ai sottospazi (in Italian)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Students: G. Viganò. Academic Year: 2020/2021.
- *Diagnosi di guasti per cuscinetti a sfera con metodi di Compressed Sensing (in Italian)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Students: N. Belotti. Academic Year: 2019/2020.
- *Modellistica e diagnosi dei guasti di un attuatore elettromeccanico per superfici secondarie di controllo del volo (in Italian)*, M.Sc. program in Mechanical Engineering, Università degli Studi di Bergamo. Students: E. Jacobelli, A. Cordoni. Academic Year: 2019/2020.
- *Metodi di riduzione dimensionale per la stima non parametrica e per la classificazione di particelle leggere (in Italian)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Student: G. Dantoni. Academic Year: 2018/2019.
- *Sviluppo e validazione sperimentale di algoritmi di manutenzione predittiva per macchine soffiatrici (in Italian)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Student: J. Ghisalberti. Academic Year: 2018/2019.
- *Sviluppo e validazione di un metodo di diagnosi e monitoraggio dei guasti per centri di lavoro ad alte prestazioni (in Italian)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Student: L. Pitturelli. Academic Year: 2018/2019.
- *Sviluppo sperimentale di un metodo model-based di diagnosi dei guasti per attuatori elettromeccanici in ambito aerospaziale (in Italian)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Student: S. Giusso. Academic Year: 2018/2019.
- *Identificazione e sintesi di Dynamic Texture attraverso approcci data-driven (in Italian)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Students: D. Previtali, N. Valceschini. Academic Year: 2018/2019.
- *Algoritmi di Health Monitoring per la manutenzione predittiva di attuatori elettromeccanici di aeromobili (in Italian)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Student: A. Russo. Academic Year: 2017/2018.

- *Modeling and identification of a hydraulic thermoforming press for advanced parallelism control (in English)*, M.Sc. program in Mechanical Engineering, Università degli Studi di Bergamo. Student: L. Covelli. Academic Year: 2017/2018.
- *Identificazione Semisupervisionata per modelli NARX (in Italian)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Student: G. Bergamelli. Academic Year: 2016/2017.
- *Progettazione e sviluppo di un software per l'archiviazione e l'interrogazione di dati genetici (in Italian)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Student: V. Uberti, A. Hu. Academic Year: 2016/2017.
- *Identificazione Semisupervisionata di modelli N-FIR (in Italian)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Student: M. Scandella. Academic Year: 2015/2016.
- *Sviluppo di un algoritmo non supervisionato per l'estrazione delle emozioni fondamentali da dati testuali (in Italian)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Student: G. Breviaro. Academic Year: 2015/2016.
- *Modeling, identification and control of a test bench for fault detection of aeronautical electro-mechanical actuators (in English)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Student: Y. Maccarana. Academic Year: 2014/2015.
- *Recommender systems for digital magazines: algorithms analysis and design (in English)*, M.Sc. program in Computer Engineering, Università degli Studi di Bergamo. Student: D. Servalli. Academic Year: 2014/2015.

PARTICIPATION IN REGIONAL, NATIONAL AND INTERNATIONAL RESEARCH PROJECTS

- *REPRISE: Reliable Electro-mechanical actuator for PRImary Surface with health monitoring*
Period: 7/2016 - Today.
Total budget: 995k€ - UniBg budget: 263k€
Partners: Piaggio Aerospace s.p.a., UmbraGroup s.p.a., Zettlex I.t.d., Università degli Studi di Bergamo.
Funded by: **European Union (H2020)** Clean Sky 2 Joint Technology Initiative.
Role: Responsible for the Work Packages WP3 - Test Phase I; WP4 - Failure prevention technology selection.
- *HOLMES: Health On Line Monitoring for Electromechanical actuator Safety*
Period: 1/2014 - 12/2016.
Total budget: 490k€ - UniBg budget: 103k€
Partners: Liebherr Aerospace GmbH, UmbraGroup s.p.a., Università degli Studi di Bergamo.
Funded by: **European Union (FP7)** Clean Sky Joint Technology Initiative.
Role: Responsible for the Work Packages WP4 - Modeling approach; WP5 - Realization of health monitoring software.
- *Health monitoring of an axis of an industrial CNC machining*
Period: 06/2018 - 7/2019.
Partners: Mandelli s.p.a., UmbraGroup s.p.a., Università degli Studi di Bergamo.
Funded by: **Italian Ministry for the Economic Development (MiSE)**.
- *WATCHMAN: Workload-reduction mAchine vision-based TeChnology Hub for MANufacturing*
Period: 02/2020 - Today.
Partners: Consorzio Intellimech, Brembo s.p.a., Fincons Group, Salf s.p.a. Laboratorio Farmacologico, Smart Robots s.r.l., SorintLab s.p.a., Università degli Studi di Bergamo, Vision s.r.l. Funded by: **Regione Lombardia**.
Role: Responsible for investing the state of art and implementation of machine vision algorithms for detecting faults in mechanical components.
- *TELECOVID: Platform for tele-monitoring with remote biosensors and tele-consultation for COVID-19 and fragile chronic patients.*
Period: 04/2020 - 10/2020.
Partners: ASST Papa Giovanni XIII, ASST Bergamo EST, Comftech s.r.l., Mediaclinics s.r.l. Funded by: **Regione Lombardia**.
Role: Support for data analysis and platform development.
- *SMART4CPPS: Smart Solutions for Cyber-Physical Production Systems*
Period: 04/2018 - Today.
Total budget: 7405k€ - UniBg budget: 694k€
Partners: C.M.S. Costruzioni macchine speciali s.p.a., Ratti s.p.a., Scaglia Indeva s.p.a., Quantra s.r.l., Porta Solutions s.p.a., Cavagna Group (OMECA), Camozzi s.p.a., Balance Systems s.r.l., TXT e-Solutions s.p.a., Fincons s.p.a., Politecnico di Milano, Consiglio Nazionale delle Ricerche - Istituto di Tecnologie Industriali e Automazione, Università degli Studi di Bergamo, Università degli Studi di Brescia.
Funded by: **Regione Lombardia**.
Role: Responsible for the following pilot projects Pilot 1 - Design of Health monitoring algorithms for linear actuators and fluid valves.

- *ADAPTIVE: A modular and adaptive approach to the design of digital factories.*
Period: 11/2015 - 01/2017.
Total budget: 11.100k€
Partners: Cosberg s.p.a., Scaglia Indeva s.p.a., Masmec s.p.a., Balluff Automation s.r.l., Copan Group s.p.a., Università degli Studi di Bergamo, Università degli Studi di Brescia, Consorzio Intellimech.
Funded by: **Italian Ministry for the Instruction, University and Research (MIUR).**
Role: Development of manufacturing fault diagnostics methods using model-free and machine learning methodologies.
- *SMART LIVING 4 ALL: Improving safety at home for children and elderly*
Period: 11/2017 - 5/2019.
Total budget: 1237k€ - UniBg budget: 293k€
Partners: ComfTech s.r.l., Mediaclinics s.r.l., Foppapedretti s.p.a., Università degli Studi di Bergamo.
Funded by: **Regione Lombardia.**
Role: Implementation of the crying analysis algorithm for babies with Tensorflow technology.
- *INTERNET OF BEAUTY: Smart and safe appliances for smart living*
Period: 11/2017 - 5/2019.
Total budget: 1125K€
Partners: Tenacta Group s.p.a., FAE Technology s.p.a., Consorzio Intellimech, Università degli Studi di Bergamo.
Funded by: **Regione Lombardia.**
Role: Support for the development of prototypes and the algorithm for assigning appliance configuration parameters.

RESEARCH GRANTS OWNER

- *New methods in system identification and control using machine learning techniques.* Funded by: Department of Management, Production and Information Engineering, University of Bergamo, 13.946,34 €, 2021.

TECHNOLOGICAL TRANSFER ACTIVITIES

Research contracts

- *Sviluppo di algoritmi di health monitoring per la manutenzione predittiva*, research project: SMART4CPPS, 10K€, 2018.
- *Sviluppo preliminare di algoritmi per la change-point detection nell'ambito della diagnostica di guasti*, funded by: Centro di Ateneo per la Gestione dell'Innovazione e del Trasferimento Tecnologico (GITT), Università degli Studi di Bergamo, 1.02k€, 2018.
- *Support to the execution of the tests at Umbra Cuscinetti, Foligno*, research project: REPRISE, 5.5k€, 2017.
- *Sviluppo di metodi di diagnostica model free con applicazione a dispositivi meccatronici*, research project: Adaptive and Modular Approaches for the DIgital enabled factory, 10k€, 2016.
- *Sviluppo di metodi di diagnostica dei guasti in ambito manifatturiero usando metodologie di machine learning*, research project: Adaptive and Modular Approaches for the DIgital enabled factory, 7k€, 2015.

Industrial collaborations

- *Design of a control system for blood extractor devices*, within a research project between Università degli Studi di Bergamo and Delcon s.r.l. (Grassobbio - BG, Italy), 2020-Today.
- *Predictive Maintenance System for beverage packaging machines*, within a research project between Università degli Studi di Bergamo and SmiGroup s.p.a. (San Giovanni Bianco - BG, Italy), 2018-2020.
- *Evaluation of computational burden for CNC trajectory planning algorithms*, within a research project between Università degli Studi di Bergamo and DDX s.r.l. (Brembate Sopra - BG, Italy), 2018.
- *Development of a methodological procedure for tuning the control system of a thermoforming press*, within a research project between Università degli Studi di Bergamo and Persico s.p.a. (Nembro - BG, Italy), 2017.
- *Estimation of sliding gates mass using inertial sensors and motor measurements*, within a research project with Università degli Studi di Bergamo and BFT s.p.a. (Schio - VI, Italy), 2017.
- *Fault detection of strand ropes via image processing techniques*, within a research project between Università degli Studi di Bergamo and Vinati s.r.l. (Nave - BS, Italy), 2017.

- *Estimation of sliding gates position using inertial sensors*, within a research project between Università degli Studi di Bergamo and BFT a.p.a. (Schio - VI, Italy), 2016.
- *Technological scouting of range finder sensors*, within a research project between Università degli Studi di Bergamo and BFT s.p.a. (Schio - VI, Italy), 2016.
- *Advanced business analytics with system identification techniques*, within a research contract between Politecnico di Milano, E-Novia s.p.a. (Milan, Italy) and Pastificio Rana s.p.a. (Verona - Italy), 2015
- *Development of a recommender system for digital kart articles*, within a research contract between University of Bergamo and E-Novia s.p.a. (Milan, Italy), 2015
- *Development of drug craving therapy algorithm with brain-computer interfaces*, within a research contract between University of Bergamo and Relazione Impresa Sociale s.r.l. (Milan, Italy), 2015

Entrepreneurial activity

- *Co-founder of the AISent S.r.l. start-up*. The company is specialized in engineering artificial intelligence solutions. Website: <https://aisent.io/>, March 2018.

PARTECIPATION TO SCIENTIFIC EVENTS

Presentation at international conferences/workshops

- 19th IFAC Symposium on System Identification (SYSID), 2021 (virtual).
- 21st IFAC World Congress, 2020 (virtual).
- 17th EUCA European Control Conference (ECC), May 12-15, 2020 (virtual).
- 13th IFAC Workshop on Adaptive and Learning Control Systems (ALCOS), December 4-6, 2019.
- 27th ERNSI Workshop, Maastricht, The Netherlands, September 22-25, 2019.
- 57th IEEE Conference on Decision and Control (CDC), Miami Beach, Florida, December 17-19 2018.
- 26th ERNSI Workshop, Cambridge, UK, September 23-26, 2018.
- 2nd IEEE Conference on Control Technology and Applications (CCTA), Copenhagen, Denmark, 2018.
- 18th IFAC Symposium on System Identification (SYSID), Stockholm, Sweden, July 9-11, 2018.
- 26th Mediterranean Conference on Control and Automation (MED), Zadar, Croatia, June 19-22, 2018.
- 16th EUCA European Control Conference (ECC), Limassol, Cyprus, June 12-15, 2018.
- 3rd Nonlinear System Identification Benchmarks Workshop, Liege, Belgium, April 9-13, 2018.
- 20th IFAC World Congress, Toulouse, France, July 9-14, 2017.
- IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM), Munich, Germany, July 3-7, 2017.
- 42nd IEEE Industrial Electronics society annual CONference (IECON), Florence, Italy, October 24-26, 2016.
- 9th IFAC Symposium on Biological and Medical Systems (BMS), Berlin, Germany, August 31-Sept. 2, 2015

Presentation to national conferences/workshops

- Annual Conference of the Italian Society of Teachers and Researchers in Automatic Control (S.I.D.R.A.), virtual conference, September 9-11, 2020.
- Annual Conference of the Italian Society of Teachers and Researchers in Automatic Control (S.I.D.R.A.), Ancona, Italy, September 11-13, 2019.
- Annual Conference of the Italian Society of Teachers and Researchers in Automatic Control (S.I.D.R.A.), Florence, Italy, September 12-14, 2018.
- Annual Conference of the Italian Society of Teachers and Researchers in Automatic Control (S.I.D.R.A.), Milan, Italy, September 11-13, 2017. **Second place for best poster presentation.**
- Annual Conference of the Italian Society of Teachers and Researchers in Automatic Control (S.I.D.R.A.), (Attendance), Bergamo, Italy, September 8-10, 2014.

EDITORIAL ACTIVITY

Reviews

I served as a reviewer for the journals Automatica, Mechatronics, Control Engineering Practice, IEEE Transactions on Automatic Control, IEEE Transactions on Industrial Electronics, IEEE Transactions on Instrumentation and Measurement, System and Control Letters, Medical Engineering and Physics and for several IFAC/IEEE conferences.

Memberships

- I am member of the Institute of Electrical and Electronics Engineers (IEEE), Control Systems Society (CSS), Signal Processing Society (SPS) and Computational Intelligence (CIS) affiliations.

POST-LAUREA COURSES

- *Model-based fault diagnosis - a linear synthesis framework using MatLab*, Teacher: A. Varga, D. Ossmann, International Graduate School of Control EEIC, Università degli studi di Padova (Italy), **21h**, March 2019.
- *Model Predictive Control*, **8h**, Teacher: A. Bemporad, IMT Lucca (Italy), May 2018.
- *Hands-On Mini-Course on nonlinear system identification*, **16h**, Teachers: J. Schoukens, M. Schoukens, J. P. Noel, K. Tiels, University of Liege (Belgium), April 2018.
- *Functional data analysis*, **12h**, Teacher: L. Sangalli, Università degli Studi di Bergamo (Italy), November 2017.
- *Robot Control*, **20h**, Teacher: A. Zanchettin, Università degli Studi di Bergamo (Italy), November 2016.
- *Sliding Mode Control*, **16h**, Teacher: E. Usai, Università degli Studi di Bergamo (Italy), September 2016.
- *Big Data*, **20h**, Teacher: A. Cuzzocrea, Università degli Studi di Bergamo (Italy), July 2016.
- *Deep Learning*, **10h**, Teacher: P. Frasconi, Università di Trento (Italy), March 2016.
- *Computer Vision*, **20h**, Teacher: C. Grana, Università degli Studi di Bergamo (Italy), February 2016.
- *Modern bayesian methods and computing for the social sciences*, **30h**, Teacher: J. Gill, Applied Bayesian Statistics School (ABS15), Como (Italy), June 2015.
- *Project Innovation and Management*, **12cfu**, Teacher: M. Kalchschmidt, Università degli Studi di Bergamo (Italy), March-June 2015.
- *Data-driven control system design*, Teacher: S. Formentin, **20h**, Politecnico di Milano (Italy), May 2015.
- *Advanced data driven methods for modeling and control*, **20h**, Teacher: S. Formentin, Università degli Studi di Bergamo (Italy), November 2014.
- *Active vibration control*, **12h**, Teacher: M. G. Tehrani, Università degli Studi di Bergamo (Italy), November 2014.
- *Structural health monitoring and dynamical identification of structures*, **12h**, Teacher: E. Chatzi, Università degli Studi di Bergamo (Italy), September 2014.

PERSONAL SKILLS AND COMPETENCES

Languages

Italian (Mother tongue), English (C1 level).

Computer skills

C, C++, Java, HTML, CSS, Visual Basic, C#, Python, R, MatLab, Simulink, LabView, Eclipse, Visual Studio, Arduino, SVN, Git, CANalyzer, Spotfire, Django, Scikit-learn, Tensorflow, Theano, Keras, Gensim, D3.js, MatLab Image toolbox, Office suite, LaTeX, Cloudera, Hive, Impala.

Sports

Futsal, Tennis.

Artistic skills and competences

Guitar, Trombone, Saxophone, musical composition and arrangement.

Driving licence

Car license.

PUBLICATIONS

International journals

- [J06] M. Scandella, M. MAZZOLENI, S. Formentin, F. Previdi
Kernel-based identification of asymptotically stable continuous-time linear dynamical systems.
International Journal of Control, 2020. DOI: 10.1080/00207179.2020.1868580.
- [J05] M. Scandella, M. MAZZOLENI, S. Formentin, F. Previdi
A note on the numerical solutions of kernel-based learning problems.
IEEE Transactions on Automatic Control, 2019. DOI: 10.1109/TAC.2020.2989769.
- [J04] M. MAZZOLENI, M. Scandella, F. Previdi, G. Pispola
Data on the first endurance activity of a Brushless DC motor for aerospace applications.
Data in Brief, 2020. DOI: 10.1016/j.dib.2020.105153. ISSN: 2352-3409.

- [J03] M. MAZZOLENI, M. Scandella, F. Previdi, G. Pispola
Experimental development of a Health Monitoring method for Electro-Mechanical Actuators of flight control primary surfaces in More Electric Aircrafts.
IEEE Access, 2019, vol. 7, pp. 153618-153634. DOI: 10.1109/ACCESS.2019.2948781. ISSN: 2169-3536.
- [J02] S. Formentin, M. MAZZOLENI, M. Scandella, F. Previdi
Nonlinear system identification via data augmentation.
Systems & Control Letters, 2019. DOI: 10.1016/j.sysconle.2019.04.004. ISSN: 0167-6911.
- [J01] M. MAZZOLENI, F. Previdi, S. Bonfiglio
Classification algorithms analysis for brain-computer interface in drug craving therapy.
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