Chiara Toffanin

Personal information

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WOS h-index	21

Profile

Motivated computer science engineer with interest and experience in automatic control, in particular applied to biological system connected to metabolism. Experience in modelling, model predictive control and data analysis in several industrial and biomedical applications, bioinformatics related to cancer research and control applied to nuclear magnetic resonance devices. My interests also include machine learning techniques to model dynamic systems and stability studies of neural networks. Experienced in working in team and independently, and passionate about research in a dynamic, stimulating, and multidisciplinary environment.

Academic career

2022 – present	Associate Professor at University of Pavia, Department of Electrical, Computer and Biomedical Engineering; SSD ING-INF/04 - Automatica
2022 – 2024	Associate of the Harvard John A. Paulson School of Engineering and Applied Sciences, Harvard University (Boston, USA)
2019 – 2022	Assistant Professor (RTDb) at University of Pavia, Department of Electrical, Computer and Biomedical Engineering; SSD ING-INF/04 - Automatica
2017 – 2019	Assistant Professor (RTDa) at University of Pavia, Department of Electrical, Computer and Biomedical Engineering; SSD ING-INF/04 - Automatica
2016 – 2017	Postdoctoral researcher at University of Pavia Design and development of control algorithms
2015 – 2016	Postdoctoral researcher at University of Oxford Cancer genomics: model-based curve fitting of high throughput screening data
2012 – 2015	Postdoctoral researcher at University of Pavia Artificial Pancreas: closed-loop system to control glycaemia in Type 1 diabetes
2009 – 2012	PhD student at University of Pavia Thesis title: “Artificial Pancreas: from modelling and control design to software implementation and clinical data analysis” (30/01/2013)
2007 – 2009	Master Degree in Computer Science Engineering at University of Pavia Thesis title: “Development of model predictive control algorithms applied to the Artificial Pancreas” Graduated with 110/110 cum laude (13/10/2009)
2004 – 2007	Bachelor Degree in Computer Science Engineering at University of Pavia Thesis title: “Studio per la realizzazione di un carrello elettronico con tecnologia Portal, JSR-168 Compliant” Graduated with 110/110 cum laude (18/09/2007)
1999 - 2004	High School Diploma in Computer Science Technology at Istituto Tecnico Industriale Statale G. Cardano Vote 100/100 with encomium

Research experience

2020 – present	Research projects: Design and development of control algorithms for glucose control, model identification and machine learning approaches for glucose prediction, signal processing for glucose sensor development, modelling of industrial processes, optimal sensor placement and sizing in water networks, modelling and optimization for agrifood processes.
2017 – 2020	Research project: Design and development of control algorithms for glucose control and modelling of industrial autoclaves
2016 – 2017	Postdoctoral project: Design and development of control algorithms
2015 – 2016	Postdoctoral project: Development of a tool for the model-based curve fitting of high throughput screening data
2012 – 2015	Postdoctoral project: Development of control algorithms for an artificial pancreas • Tuning of the algorithm exploiting data collected in outpatients clinical trials • Run-to-Run approaches to adapt the therapy day-by-day considering the variability of the patient • Non parametric and parametric identification techniques to tailor the model on each individual patient • Development of a tool for the analysis of a large amount of data collected during a preliminary 6-months clinical trial
2011 – 2012	Internship as academic research at University of California, Santa Barbara - Chemical Engineering Department Artificial Pancreas project: study of the insulin sensitivity dynamic and development of a safety module to avoid hypoglycaemia episodes to be integrated in the architecture of an artificial pancreas
2009 – 2012	PhD project: Development of model predictive control algorithms for the Artificial Pancreas • Reengineering of the simulator developed in Simulink – Matlab environment • Improvement of the control algorithm exploiting new data collected in the clinical trials • Parametric approaches for the identification of new individual models to be used in the control algorithm • New procedure for tuning of the algorithm using the new parametric identified models • Development of a software platform for the clinical trials and integration of a telemedicine module with the control algorithm • Identification of a model for the noise which affects the glucose measurements using a large amount of data collected in clinical trials • Tuning of the algorithm exploiting data collected in longer clinical trials

Journal Publications (45)

J1. Marchese G., J.E. Herranz-Luque, S. Anwar, V. Vaglia, **C. Toffanin**, A. Moreno-Delafuente, B.E. Sastre, M.J. Marqués Pérez, Soil Management and Machine Learning Abandonment Detection in Mediterranean Olive Groves under drought: A Case Study from Central Spain, Soil Systems, Special Issue "Research on Soil Management and Conservation: 2nd Edition", 2025, 9, no. 4, 118. https://doi.org/10.3390/soilsystems9040118

J2. Aiello E.M., **C. Toffanin**, M.C. Riddell, C.K. Martin, S.R. Patton, R.L. Gal, F.J. Doyle III, A hierarchical network model for the estimate of the energy expenditure in individuals with type 1 diabetes, Engineering Applications of Artificial Intelligence, 159, 2025. https://doi.org/10.1016/j.engappai.2025.111758

J3. Rancati S., P. Bosoni, R. Schiaffini, A. Deodati, P.A. Mongini, L. Sacchi, **C. Toffanin**, R. Bellazzi, Exploration of Foundational Models for Blood Glucose Forecasting in Type-1 Diabetes Pediatric Patients, Diabetology, 5, no. 6, 584-599, 2024.

J4. Lo Presti J., C. Giudicianni, **C. Toffanin**, E. Creaco, L. Magni, G. Galuppini, Combining clustering and regularised neural network for burst detection and localization and flow/pressure sensor placement in water distribution networks, Journal of Water Process Engineering, 105473, 2024.

J5. Abuin P., A. Ferramosca, **C. Toffanin**, L. Magni, A.H. González, Pulsatile Zone MPC with asymmetric stationary cost for artificial pancreas based on a non-standard IOB constraint, Journal of Process Control, 136, 103191, 2024. https://doi.org/10.1016/j.jprocont.2024.103191

J6. **Toffanin C.**, L. Magni, Constrained Versus Unconstrained Model Predictive Control for Artificial Pancreas, IEEE Transactions on Control Systems Technology, 2288-2299, 2023. https://doi.org/10.1109/TCST.2023.3291564

J7. Iacono F., L. Magni, **Toffanin C.**, Personalized LSTM-based alarm systems for hypoglycemia and hyperglycemia prevention, Biomedical Signal Processing and Control, 86, 2023. https://doi.org/10.1016/j.bspc.2023.105167

J8. **Toffanin C.**, Di Palma F., Iacono F., L. Magni, LSTM network for the oxygen concentration modeling of a wastewater treatment plant, Applied Science, 13, Issue 13, 7461, 2023. https://doi.org/10.3390/app13137461

J9. **Toffanin C.**, L. Magni, Run-to-Run algorithm for clinical decision support: In silico study for a personalized adaptation of the basal-bolus therapy and of the visit scheduling, Control Engineering Practice, 2023. https://doi.org/10.1016/j.conengprac.2023.105578

J10. Dalla Libera A., **C. Toffanin**, G. Pillonetto, A. Galderisi, C. Cobelli, In silico design and validation of a time-varying PID controller for an artificial pancreas with intraperitoneal insulin delivery and glucose sensing, APL Bioengineering, vol. 7, ISSN: 2473-2877, https://doi.org/10.1063/5.0145446

J11. Thamotharan P., S. Srinivasan, J. Kesavadev, G. Krishnan, V. Mohan, S. Seshadhri, K. Bekiroglu, **C. Toffanin**, Human Digital Twin for Personalized Elderly Type 2 Diabetes Management, Journal of Clinical Medicine, 12, Issue 6, 2023. https://doi.org/10.3390/jcm12062094

J12. Aiello E.M., **C. Toffanin**, L. Magni, G. De Nicolao, Model-based identification of eating behavioral patterns in populations with type 1 diabetes, Control Engineering Practice, 123, 2022. https://doi.org/10.1016/j.conengprac.2022.105128

J13. Lo Presti J., A. Galderisi, F.J. Doyle, H.C. Zisser, E. Dassau, E. Renard, **C. Toffanin**, C. Cobelli, Intraperitoneal Insulin Delivery: Evidence of a Physiological Route for Artificial Pancreas From Compartmental Modeling, Journal of Diabetes Science and Technology, 17, Issue3, 751-756, 2022.

J14. **Toffanin C.**, L. Magni, C. Cobelli, Artificial Pancreas: In Silico Study Shows No Need of Meal Announcement and Improved Time in Range of Glucose with Intraperitoneal vs Subcutaneous Insulin Delivery, IEEE Transactions on Medical Robotics and Bionics, 3, Issue 2, 306-314, 2021.

J15. Iacono F., J. Lo Presti, I. Schimperna, S. Ferretti, A. Mezzadra, L. Magni, **C. Toffanin**, Improvement of manufacturing technologies through a modelling approach: an air-steam sterilization case-study, Procedia Computer Science, 180, 162-171, 2021.

J16. Di Palma F., F. Iacono, **C. Toffanin**, A. Ziccardi, L. Magni, Scalable model for industrial coffee roasting chamber, Procedia Computer Science, 180, 122-131, 2021.

J17. **Toffanin C.**, M. Kozak, Z. Sumnik, C. Cobelli, L. Petruzelkova, In silico trials of an open-source android-based artificial pancreas: a new paradigm to test safety and efficacy of do-it-yourself systems, Diabetes Technology and Therapeutics, 22, Issue 2, 112-120, 2020.

J18. Aiello E.M., G. Lisanti, L. Magni, M. Musci, **C. Toffanin**, Therapy-driven Deep Glucose Forecasting, Engineering Applications of Artificial Intelligence, 87, 2020. https://doi.org/10.1016/j.engappai.2019.103255

J19. **Toffanin C.**, E.M. Aiello, C. Cobelli, L. Magni, Hypoglycemia Prevention via Personalized Glucose-Insulin Models Identified in Free-Living Conditions, Journal of Diabetes Science and Technology, 13, Issue 6, 1008-1016, 2019.

J20. Galuppini G., R. Rolfi, **C. Toffanin**, D. Raimondo, Y. Xia, G. Ferrante, L. Magni, Towards a Model-Based Field-Frequency Lock for Fast-Field Cycling NMR, Applied Magnetic Resonance, 50, Issue 8, 1025-1047, 2019.

J21. **Toffanin C.**, E.M. Aiello, S. Del Favero, C. Cobelli, L. Magni, Multiple models for artificial pancreas predictions identified from free-living condition data: A proof of concept study, Journal of Process Control, 77, 29-37, 2019.

J22. Galuppini G., E. Creaco, **C. Toffanin**, L. Magni, Service pressure regulation in water distribution networks, Control Engineering Practice, 86, 70-84, 2019.

J23. Aiello E.M., **C. Toffanin**, M. Messori, C. Cobelli, L. Magni, Postprandial Glucose Regulation via KNN meal classification in Type 1 Diabetes Model predictive control with integral action for artificial pancreas, IEEE Control Systems Letters, 3, Issue 2, 230-235, 2019.

J24. Incremona G.P., M. Messori, **C. Toffanin**, C. Cobelli, L. Magni, Model predictive control with integral action for artificial pancreas, Control Engineering Practice, 77, 86-94, 2018.

J25. **Toffanin C.**, S. Del Favero, E.M. Aiello, M. Messori, C. Cobelli, L. Magni, Glucose-insulin model identified in free-living conditions for hypoglycaemia prevention, Journal of Process Control, 64, 27–36, 2018.

J26. Messori M., J. Kropff, S. Del Favero, J. Place, R. Visentin, R. Calore, **C. Toffanin**, F. Di Palma, G. Lanzola, A. Farret, F. Boscari, S. Galasso, A. Avogaro, P. Keith-Hynes, B.P. Kovatchev, D. Bruttomesso, L. Magni, J.H. DeVries, E. Renard, C. Cobelli for the AP@home consortium, Individually adaptive artificial pancreas in subjects with type 1 diabetes: a one-month proof-of-concept trial in free-living conditions, Diabetes Technology & Therapeutics, 19, Issue 10, 560-571, 2017.

J27. **Toffanin C.**, R. Visentin, M. Messori, C. Cobelli, L. Magni, Towards a Run-to-Run Adaptive Artificial Pancreas: In Silico Results, IEEE Transactions on Biomedical Engineering, 65, Issue 3, 479-488, 2017.

J28. **Toffanin C.**, M. Messori, C. Cobelli, L. Magni, Automatic adaptation of basal therapy for Type 1 diabetic patients: a Run-to-Run approach, Biomedical Signal Processing and Control, 31, 539-549, 2017.

J29. Messori M., **C. Toffanin**, S. Del Favero, G. De Nicolao, C. Cobelli, L. Magni, Model individualization for artificial pancreas, Computer Methods and Programs in Biomedicine, 171, 133-140, 2019.

J30. Renard E., A. Farret, J. Kropff, D. Bruttomesso, M. Messori, J. Place, R. Visentin, R. Calore, **C. Toffanin**, F. Di Palma, G. Lanzola, P. Magni, F. Boscari, S. Galasso, A. Avogaro, P. Keith-Hynes, B. Kovatchev, S. Del Favero, C. Cobelli, L. Magni, J.H. DeVries, for the AP@home consortium, Day and Night Closed-Loop Glucose Control in Patients with Type 1 Diabetes under Free-Living Conditions: Results of a Single-Arm 1-Month Experience Compared With a Previously Reported Feasibility Study of Evening and Night at Home, Diabetes Care, 39, 1151-1160, 2016.

J31. Kropff J., S. Del Favero, J. Place, **C. Toffanin**, R. Visentin, M. Monaro, M. Messori, F. Di Palma, G. Lanzola, A. Farret, F. Boscari, S. Galasso, P. Magni, A. Avogaro, P. Keith-Hynes, B.P. Kovatchev, D. Bruttomesso, C. Cobelli, J H. DeVries, E. Renard, L. Magni, for the AP@home consortium, 2 month evening and night closed-loop glucose control in patients with type 1 diabetes under free-living conditions: a randomised crossover trial, The Lancet Diabetes & Endocrinology, 3, Issue 12, 939-947, 2015.

J32. Del Favero S., J. Place, J. Kropff, M. Messori, P. Keith-Hynes, R. Visentin, M. Monaro, S. Galasso, F. Boscari, **C. Toffanin**, F. Di Palma, G. Lanzola, S. Scarpellini, A. Farret, B. Kovatchev, A. Avogaro, D. Bruttomesso, L. Magni, J.H. DeVries, C. Cobelli, E. Renard, on behalf of the AP@home Consortium, Multicenter outpatient dinner/overnight reduction of hypoglycemia and increased time of glucose in target with a wearable artificial pancreas using modular model predictive control in adults with type 1 diabetes, Diabetes, Obesity and Metabolism, 17, Issue 5, 468-476, 2015.

J33. Lanzola G., **C. Toffanin**, F. Di Palma, S. Del Favero, L. Magni, R. Bellazzi, on behalf of the AP@home consortium, Designing an artificial pancreas architecture: the AP@home experience, Medical & Biological Engineering & Computing, 53, Issue 12, 1271-1283, 2015.

J34. Zisser H.,E. Renard, B. Kovatchev, C. Cobelli, A. Avogaro, R. Nimri, L. Magni, B. Buckingham, H.P. Chase, F.J. Doyle III, J. Lum, P. Calhoun, C. Kollman, E. Dassau, A. Ferret, J. Place, M. Breton, S. Anderson, C. Dalla Man, S. Del Favero, D. Bruttomesso, A. Filippi, R. Scotton, M. Phillip, E. Atlas, I. Muller, S. Miller, **C. Toffanin**, D.M. Raimondo, G. De Nicolao, R.W. Beck, for the Control to Range Study Group, Multicenter Closed-Loop Insulin Delivery Study Points to Challenges for Keeping Blood Glucose in a Safe Range by a Control Algorithm in Adults and Adolescents with Type 1 Diabetes From Various Sites, Diabetes Technology and Therapeutics, 16, Issue 10, 613-622, 2014.

J35. Chase H., F. Doyle, H. Zisser, E. Renard, R. Nimri, C. Cobelli, B. Buckingham, D. Maahs, S. Anderson, Magni L., J. Lum, P. Calhoun, C. Kollman, R. Beck, L. Jovanovic, A. Wollitzer, W. Bevier, E. Dassau, K. Castorino, K. Markova, J. Wiley, E. Beveridge, N. Santibanez, A. Sales, M. Bradley, A. Castorino, B. Kovatchev, S. Demartini, S. Brown, W. Clarke, M. Breton, S. Patek, P. Keith-Hynes, C. Hughes-Karvetski, M. McElwee, M. Oliveri, C. Wakeman, A. Farret, M. Pelletier, H. Chevassus, J. Place, M. Phillip, E. Atlas, T. Oron, A. Farfel, S. Demol, E. Mel, T. Ben-Ari, M. Gilon, A. Parnes, I. Muller, S. Miller, A. Hamou, O. Hermon, G. Shiovitch-Mantzuri, G. Fayman, C. Man, A. Avogaro, D. Bruttomesso, A. Maran, M. Schiavon, S. D. Favero, R. Visentin, R. Scotton, A. Filippi, **Toffanin C.**, De Nicolao G., S. Mancini, Raimondo D., D.Wilson, K. Benassi, P. Clinton, B. Harris, S. Shanmugham, K. Caswell, R. Slover, S. Sullivan, L. Messer, V. Gage, J. Realsen, E. Westfall, H. Goettle, J.

Sibayan, N. Njeru, W. Sauer, J. Pickup, I. Hirsch, H. Wolpert, Multicenter closed-loop/hybrid meal bolus insulin delivery with type 1 diabetes, Diabetes Technology and Therapeutics, 16, 623-632, 2014.

J36. Kovatchev B.P., E. Renard, C. Cobelli, H.C. Zisser, P. Keith-Hynes, S.M. Anderson, S.A. Brown, D.R. Chernavvsky, M.D. Breton, L.B. Mize, A. Farret, J. Place, D. Bruttomesso, S. Del Favero, F. Boscari, S. Galasso, A. Avogaro, L. Magni, F. Di Palma, **C. Toffanin**, M. Messori, E. Dassau, F.J. Doyle III, Safety of Outpatient Closed-Loop Control: First Randomized Crossover Trials of a Wearable Artificial Pancreas, Diabetes Care, 37, Issue 7, 1789-1796, 2014.

J37. Del Favero S., D. Bruttomesso, F. Di Palma, G. Lanzola, R. Visentin, A. Filippi, R. Scotton, **C. Toffanin**, M. Messori, S. Scarpellini, P. Keith-Hynes, B.P. Kovatchev, J.H. DeVries, E. Renard, L. Magni, A. Avogaro, C. Cobelli, on behalf of the AP@home consortium, First Use of Model Predictive Control in Outpatient Wearable Artificial Pancreas, Diabetes Care, 37, Issue 5, 1212-1215, 2014.

J38. Lanzola G., S. Scarpellini, F. Di Palma, **C. Toffanin**, S. Del Favero, L. Magni, R. Bellazzi, on behalf of the AP@home consortium, Monitoring Artificial Pancreas Trials Through Agent-Based Technologies: A case Report, Journal of Diabetes Science and Technology, 8, Issue 2, 216-224, 2014.

J39. Luijf Y.M., J.H. DeVries, K. Zwinderman, L. Leelarathna, M. Nodale, K. Caldwell, K. Kumareswaran, D. Elleri, J. Allen, M. Wilinska, M. Evans, R. Hovorka, W. Doll, M. Ellmerer, J.K. Mader, E. Renard, J. Place, A. Farret, C. Cobelli, S. Del Favero, C. Dalla Man, A. Avogaro, D. Bruttomesso, A. Filippi, R. Scotton, L. Magni, G. Lanzola, F. Di Palma, P. Soru, **C. Toffanin**, G. De Nicolao, S. Arnolds, C. Benesch, L. Heinemann, on behalf of the AP@home consortium, Day and Night Closed-Loop Control in Adults With Type 1 Diabetes Mellitus. A comparison of two closed-loop algorithms driving continuous subcutaneous insulin infusion versus patient self-management, Diabetes Care, 36, Issue 12, 3882-3887, 2013.

J40. **Toffanin C**, M. Messori, F. Di Palma, G. De Nicolao, C. Cobelli, L. Magni, Artificial Pancreas: Model Predictive Control Design from Clinical Experience, Journal of Diabetes Science and Technology, 7, Issue 6, 1470-1483, 2013.

J41. **Toffanin C**., H. Zisser, F.J. Doyle, E. Dassau, Dynamic Insulin On Board: Incorporation of Circadian Insulin Sensitivity Variation, Journal of Diabetes Science and Technology, 7, Issue 4, 928-940, 2013.

J42. Patek S., L. Magni, E. Dassau, C.S. Hughes-Karvetski, **C. Toffanin**, G. De Nicolao, M. Breton, C. Dalla Man, E. Renard, H. Zisser, F. J. Doyle III, C. Cobelli, B. P. Kovatchev, Modular Closed-Loop Control of Diabetes, IEEE Transactions on Biomedical Engineering, 59, Issue 11, 2986-2999, 2012.

J43. Breton M., A. Farret, D. Bruttomesso, S. Anderson, L. Magni, S. Patek, C. Dalla Man, J. Place, S. Demartini, S. Del Favero, **C. Toffanin**, C. Hughes, E. Dassau, H. Zisser, F.J. Doyle III, G. De Nicolao, A. Avogaro, C. Cobelli, E. Renard, B.P. Kovatchev, Fully Integrated Artificial Pancreas in Type 1 Diabetes: Modular Closed-Loop Glucose Control Maintains Near Normoglycemia, Diabetes, 61, Issue 9, 2230-2237, 2012.

J44. Soru P., G. De Nicolao, **C. Toffanin**, C. Dalla Man, C. Cobelli, L. Magni, on behalf of the AP@home consortium, MPC based Artificial Pancreas: Strategies for individualization and meal compensation, Annual Reviews in Control, 36, 118-128, 2012.

J45. Magni L., M. Forgione, **C. Toffanin**, C. Dalla Man, B. Kovatchev, G. De Nicolao and C. Cobelli, Run-to-Run Tuning of Model Predictive Control for Type 1 Diabetes Subjects: In Silico Trial, Journal of Diabetes Science and Technology, 3, Issue 5, 1091-1098, 2009.

Conference Publications (54)

C1. Mongini P.A., Drecogna M., **C. Toffanin**, New Physics-LSTM Hybrid Models for Control-Oriented Glucose Prediction in Type 1 Diabetes, American Control Conference (ACC) Denver (Colorado), 8th – 10th July, 2025.

C2. Anwar, S., G. Marchese, V. Vaglia, **C. Toffanin**, Comparative Analysis of YOLO Models for Vineyard Abandonment Detection in Oltres Pavese, TERRAenVISION 2025, Granada (Spain), 8th - 11th July, 2025.

C3. Ragni M., P.A. Mongini, L. Magni, **C. Toffanin**, Multiple Constrained MPCs for glucose regulation in Type 1 Diabetes, 1st IFAC Workshop on Engineering Diabetes Technologies (EDT 2025), Valencia (Spain), 8th – 9th May, 2025.

C4. Mongini P.A., M. Ragni, L. Magni, **C. Toffanin**, Periodic MPC for glucose control in Type 1 Diabetes, 1st IFAC Workshop on Engineering Diabetes Technologies (EDT 2025), Valencia (Spain), 8th – 9th May, 2025.

C5. Anwar S., G. Marchese, **C. Toffanin**, V. Vaglia, Vineyard condition detection method using Google Earth Images and the YOLOv8 model in Northern Italy, EGU General Assembly 2025, Vienna (Austria), 27th Apr–2nd May 2025, EGU25-981, https://doi.org/10.5194/egusphere-egu25-981, 2025.

C6. Awais Khan N., J. Tolgyesi, E. Bianchi, **C. Toffanin**, P. Dondi, D-Care: A Multi-Tone LLM-based Chatbot Assistant for Diabetes Patients, 18th International Conference on Health Informatics (HEALTHINF 2025), Porto (Portugal), 20th–22nd Feb 2025.

C7. Drecogna M., C. Cobelli, **C. Toffanin**, A neural network-based safety module for hypoglycemia prevention in T1D subjects with well-regulated and oscillatory glucose traces, International ATTD Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2025), Amsterdam (Netherlands), 19th - 22nd March 2025.

C8. Mongini P.A., M. Mazzoleni, A. Ferramosca, L. Magni, **C. Toffanin**, A Meal Detection Approach Based on Parity Space to Detect Untreated Meals in Subjects with Type 1 Diabetes, 63rd IEEE Conference on Decision and Control, Milan (Italy), 16th – 19th December 2024.

C9. Ragni M., P.A. Mongini, L. Magni, **C. Toffanin**, Multiple Model Predictor for Type 1 diabetes, 12nd IFAC Symposium on Biological and Medical Systems, Villingen-Schwenningen (Germany), 10th – 13th September 2024.

C10. Drecogna M., C. Cobelli, **C. Toffanin**, Personalized LSTM-Based Alarm Systems for Hypoglycemia Prevention in an Intraperitoneal Artificial Pancreas, 32nd Mediterranean Conference on Control and Automation (MED 2024), Chania (Crete, Greece), 11th - 14th June 2024.

C11. **Toffanin C.**, L. Magni, Personalized Constrained MPC for Glucose Regulation, 22nd IFAC World Congress, Yokohama (Japan), 9th – 14th July 2023.

C12. Lo Presti J., L. Magni, **C. Toffanin**, Ship Manoeuvering Modelling with a Physics-Oriented Neural Network-Based Approach, 22nd IFAC World Congress, Yokohama (Japan), 9th – 14th July 2023.

C13. **Toffanin C.**, F. Iacono, L. Magni, Personalized LSTM-Based Alarm Systems for Hypoglycemia Prevention, 31st Mediterranean Conference on Control and Automation (MED 2023), Limassol (Cyprus), 26th - 29th June 2023.

C14. Drecogna M., A. Galderisi, C. Cobelli, **C. Toffanin**, Intraperitoneal Insulin Delivery Closed-Loop System: Design of a Safety Module, International ATTD Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2023), Berlin (Germany), 22nd – 25th February 2023.

C15. Abuin P., A. Ferramosca, **C. Toffanin**, L. Magni, A.H. Gonzalez, Artificial pancreas under periodic MPC for trajectory tracking: handling circadian variability of insulin sensitivity, 18th IFAC Workshop on Control Applications of Optimization (CAO22), Gif sur Yvette (France), 18th-22nd July 2022.

C16. Iacono F., L. Magni, **C. Toffanin**, Personalized LSTM models for glucose prediction in Type 1 diabetes subjects, 30th Mediterranean Conference on Control and Automation (MED 2022), Athens (Greece), 28th June - 1st July 2022.

C17. Lo Presti J., R. Visentin, L. Magni, A. Galderisi, C. Cobelli, **C. Toffanin**, IP-IP Padova simulator: intraperitoneal insulin delivery and glucose sensing, International ATTD Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2022), Barcelona (Spain), 27th – 30th April 2022.

C18. Dalla Libera A., G. Pillonetto, **C. Toffanin**, A. Galderisi, C. Cobelli, In Silico Design and Assessment of a Time-varying PID Controller for an Intraperitoneal Artificial Pancreas, International ATTD Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2022), Barcelona (Spain), 27th – 30th April 2022.

C19. Iacono F., L. Magni, **C. Toffanin**, Patient-tailored LSTM model for hypoglycemia prevention: an in-silico case study, Mathematical Modelling and Control for Healthcare and Biomedical Systems (MCHBS 2021), Virtual Online Conference, 28th - 30th September 2021.

C20. **Toffanin C.**, J. Lo Presti, L. Magni, A. Galderisi, C. Cobelli, Intraperitoneal model of insulin kinetics in type 1 diabetes, International ATTD Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2021), Virtual Online Conference, 2nd - 5th June 2021.

C21. Iacono F., J. Lo Presti, I. Schimperna, S. Ferretti, A. Mezzadra, L. Magni, **C. Toffanin**, Improvement of manufacturing technologies through a modelling approach: an air-steam sterilization case-study, International Conference on Industry 4.0 and Smart Manufacturing (ISM 2020), Virtual Online Conference, 23rd – 25th November 2020.

C22. Di Palma F., F. Iacono, **C. Toffanin**, A. Ziccardi, L. Magni, Scalable model for industrial coffee roasting chamber, International Conference on Industry 4.0 and Smart Manufacturing (ISM 2020), Virtual Online Conference, 23rd – 25th November 2020.

C23. **Toffanin C.**, M. Schiavon, E.M. Aiello, C. Cobelli, L. Magni, Incorporation of intraperitoneal insulin delivery in the UVA/Padova Type 1 diabetes simulator: model predictive control in silico trials vs the subcutaneous route, International ATTD Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2020), Madrid (Spain), 19th – 22nd February 2020.

C24. Aiello E.M., **C. Toffanin**, G. De Nicolao, C. Cobelli, L. Magni, A probabilistic framework to design realistic meal scenarios in in silico Type 1 diabetes free-living trials, International ATTD Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2020), Madrid (Spain), 19th – 22nd February 2020.

C25. Iacono F., S. Ferretti, A. Mezzadra, L. Magni, **C. Toffanin**, Industry 4.0: Mathematical model for monitoring sterilization processes, IEEE International Conference on Systems, Man, and Cybernetics (IEEE SMC 2019) - Industry 4.0, Bari (Italy), 6th – 9th October 2019.

C26. Aiello E.M., Z. Wu, P.D. Christofides, **C. Toffanin**, C. Cobelli, L. Magni, Improving Diabetes Conventional Therapy via Machine Learning Modeling, American Control Conference (ACC), Philadelphia (Pennsylvania), 10th – 12th July 2019.

C27. Aiello E.M., **C. Toffanin**, M. Messori, C. Cobelli, L. Magni, Postprandial Glucose Regulation via KNN meal classification in Type 1 Diabetes Model predictive control with integral action for artificial pancreas, 57th IEEE Conference on Decision and Control (CDC), Miami (Florida), 17th – 19th December 2018.

C28. Magni L., **C. Toffanin**, Individualized Model Predictive Control of Type 1 Diabetes in Free Living Conditions, 6th IFAC Conference on Nonlinear Model Predictive Control, Madison (Wisconsin), 19th - 22nd August 2018.

C29. **Toffanin C.**, S. Del Favero, E.M. Aiello, M. Messori, C. Cobelli, L. Magni, MPC Model Individualization in Free-Living Conditions: A Proof-of-Concept Case Study, 20th IFAC World Congress, Toulouse (France), 9th – 14th July 2017. https://doi.org/10.1016/j.ifacol.2017.08.271

C30. Incremona G.P., M. Messori, **C. Toffanin**, C. Cobelli, L. Magni, Artificial Pancreas: from Control-to-Range to Control-to-Target, 20th IFAC World Congress, Toulouse (France), 9th – 14th July 2017. https://doi.org/10.1016/j.ifacol.2017.08.1152

C31. Galuppini G., **C. Toffanin**, D.M. Raimondo, A. Provera, Y. Xia, R. Rolfi, G. Ferrante, L. Magni, Towards a Model-Based Field-Frequency Lock for NMR, World Congress, 50, no. 1, 13020-13025, 20th IFAC World Congress, Toulouse (France), 9th – 14th July 2017. https://doi.org/10.1016/j.ifacol.2017.08.1999

C32. Messori M., **C. Toffanin**, S. Del Favero, G. De Nicolao, C. Cobelli, and L. Magni, A nonparametric approach for model individualization in an Artificial Pancreas, 9th IFAC Symposium on Biological and Medical Systems, Berlin (Germany), 31st August – 2nd September 2015.

C33. E. Renard, J.H. Devries, C. Cobelli, L. Magni, J. Place, J. Kropff, S. Del Favero, R. Visentin, M. Monaro, **C. Toffanin**, F. Di Palma, G. Lanzola, M. Messori, A. Farret, F. Boscari, S. Galasso, D. Bruttomesso, A. Avogaro, AP@home consortium, Reduction of Hyper- and Hypoglycemia during Two Months with a Wearable Artificial Pancreas from Dinner to Breakfast in Patients with Type 1 Diabetes, American Diabetes Association (ADA), Boston (Massachusetts), 5th – 9th June 2015.

C34. Magni L., **C. Toffanin**, F. Di Palma, M. Messori, S. Del Favero, R. Visentin, G. Lanzola, F. Boscari, S. Galasso, A. Avogaro, D. Bruttomesso, C. Cobelli, Adaptive Model Predictive Control for Artificial Pancreas: from in Silico to Outpatient, International ATTD Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2015), Paris (France), 18th - 21st February 2015

C35. **Toffanin C.**, A. Sandri, M. Messori, C. Cobelli, L. Magni, Automatic adaptation of basal-bolus therapy for Type 1 diabetic patients: a Run-to-Run approach, World Congress, 19, no. 1, 2070-2075, 19th IFAC World Congress Cape Town (South Africa), 24th – 29th August 2014.

C36. Messori M., E. Fornasiero, **C. Toffanin**, C. Cobelli, L. Magni, Constrained Model Predictive Conotrol for blood-glucose regulation in an Artificial Pancreas, World Congress, 19, no. 1, 10144-10149, 19th IFAC World Congress Cape Town (South Africa), 24th – 29th August 2014.

C37. **Toffanin C.**, M. Messori, F. Di Palma, G. Lanzola, G. De Nicolao, C. Cobelli, L. Magni, Model Predictive Control for Artificial Pancreas: from in-silico to in-vivo, Gruppo Nazionale Bioingegneria (GNB), IV Congresso, Università degli Studi di Pavia, Pavia (Italy), 25th – 27th June 2014.

C38. Del Favero S., J. Place, J. Kropff, M. Messori, P. Keith-Hynes, R. Visentin, M. Munaro, D. Bruttomesso, S. Galasso, F. Boscari, **C. Toffanin**, F. Di Palma, G. Lanzola, S. Scarpellini, A. Farret, B. P. Kovatchev, L. Magni, A. Avogaro, J. H. Devries, C. Cobelli, and E. Renard, on behalf of the AP@home consortium, Multicenter Outpatient Wearable Articial Pancreas (AP) Study: Improved Safety and Efficacy of Glycemic Control, 74th American Diabetes Association Scientific Session, San Francisco, California (U.S.A.), 13th – 17th June 2014.

C39. **Toffanin C.**, A. Sandri, M. Messori, F. Di Palma, C. Cobelli, L. Magni, Automatic adaptation of basal/bolus therapy for Type 1 diabetic patient wearing a glucose sensor: in silico trial results, Diabetes Technology and Therapeutics, 16, Issue 1, A149-A149, 2014.

C40. M. Messori, E. Fornasiero, **C. Toffanin**, F. Di Palma, C. Cobelli, L. Magni, Suboptimal Constrained Model Predictive Control for automatic insulin delivery in Type-1 diabetic patients: design based on clinical data, Diabetes Technology & Therapeutics, 16, Issue 1, A105-A105, 2014.

C41. Gentili M, D. Caltabiano, R. Sannino, **C. Toffanin**, F. Di Palma, L. Magni, S. Lane, Embedded Implementation of Modular Closed-Loop Control of Diabetes and In Silico Validation, IEEE 15th International Conference on e-Health Networking, Applications and Services (Healthcom), Lisbon (Portugal), 9th – 12th October 2013.

C42. Magni L., F. Di Palma, M. Messori, **C. Toffanin**, M. Torchio, G. De Nicolao and C. Cobelli, Model Predictive Control for outpatient trials: developments based on AP@home clinical data, Diabetes Technology & Therapeutics, 15, A81, 6th Advanced Technologies & Treatments for Diabetes (ATTD2013), Paris (France), 27th February - 2nd March 2013.

C43. Magni L., P. Brega, F. Di Palma, M. Messori, **C. Toffanin** and C. Cobelli, Hypoglycaemia Detection for Outpatient trial: Trade-off Between True and False Positive, 6th Advanced Technologies & Treatments for Diabetes (ATTD2013), Paris (France), 27th February - 2nd March 2013.

C44. Di Palma F., A. Avogaro, C. Benesch, D. Bruttomesso, J.H. DeVries, W. Doll, G. De Nicolao, S. Del Favero, L. Heinemann, R. Hovorka, L. Leelarathna, Y.M. Luijf, J. Mader, M. Nodale, J. Place, E. Renard, P. Soru, **C. Toffanin**, L. Magni, C. Cobelli on behalf of the AP@home consortium, Impact of different timing of insulin delivery in a 23-hour clinical trial with the international Artificial Pancreas (iAP) control algorithm, 1st Annual Meeting of the European Association for the Study of Diabetes (EASD), Dubai (United Arab Emirates), 4th – 6th December 2012.

C45. Devries J.H., A. Avogaro, C. Benesch, D. Bruttomesso, K. Caldwell, C. Cobelli, W. Doll, S. Del Favero, L. Heinemann, R. Hovorka, L. Leelarathna, Y.M. Luijf, J. Mader, L. Magni, M. Nodale J. Place, E, Renard, **C. Toffanin**, on behalf of the AP@home consortium, Comparison of Two Closed Loop Algorithms with Open Loop Control in Type 1 Diabetes, Wiener Klinische Wochenschrif, 124, 21-22, 72nd Scientific sessions American Diabetes Association (ADA 2012), Philadelphia (Pennsylvania), 8th -12th June 2012.

C46. **Toffanin C.**, H. Zisser, F. J. Doyle III, E. Dassau, Dynamic Insulin On Board: An Approach Based on the Circadian Rhythm of Insulin Sensitivity, 72nd Scientific sessions American Diabetes Association (ADA 2012), Philadelphia (Pennsylvania), 8th -12th June 2012.

C47. **Toffanin C.**, L. Magni, G. De Nicolao, H. Zisser, B. Kovatchev, E. Dassau, F.J. Doyle III, C. Dalla Man and C. Cobelli, Meal regulation in Type 1 diabetes: Model Predictive artificial pancreas controller enhanced by insulin-on-board calculation, 4st International ATTD Conference on Advanced Technologies and Treatments for Diabetes (ATTD 2012), Barcelona (Spain), 8th – 11th February 2012.

C48. Magni L., P. Soru, **C. Toffanin**, C. Dalla Man, C. Cobelli, G. De Nicolao, AP@Home: ap-algorithms: model predictive control with a feedback/feedforward meal control strategy, 5th International Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2012), Barcelona (Spain), 8th – 11th February 2012.

C49. Soru P., C. Dalla Man, **C. Toffanin**, M. E. Wilinska, R. Hovorka, L. Magni, G. De Nicolao, C. Cobelli, In silico comparison of AP@home closed loop control algorithms, 5th International Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2012), Barcelona (Spain), 8th – 11th February 2012.

C50. Magni L., **C. Toffanin**, C. Dalla Man, B. Kovatchev, C. Cobelli, G. De Nicolao, Model Predictive Control of Type 1 Diabetes Built on Top of Conventional Therapy, 18th World Congress International Federation of Automatic Control (IFAC 2011), Milan (Italy), 28th August – 2nd September 2011.

C51. Renard E., D. Bruttomesso, L. Magni, C. Dalla Man, S. Del Favero, **C. Toffanin**, J. Place, A. Farret, A. Maran, E. Dassau, M. Breton, C. Cobelli, The JDRF multi-modular Model Predictive Control-To-Range (MPC2R) allows simultaneous improvement in both safety and efficacy of closed-loop insulin delivery in type 1 diabetes, 71st Scientific sessions American Diabetes Association (ADA 2011), San Diego (California), 24th – 26th June 2011.

C52. Magni L., **C. Toffanin**, P. Soru, C. Dalla Man, C. Cobelli, G. De Nicolao, Individualization of Model Predictive Control for the artificial pancreas from standard CGM traces, 4th International ATTD Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2011), London (UK), 16th – 19th February 2011.

C53. Magni L., **C. Toffanin**, C. Dalla Man, B. Kovatchev, C. Cobelli, G. De Nicolao, Range Correction Module with Model Predictive Control for Type 1 diabetes, Diabetes Technology Meeting (DTM 2010), Bethesda (Maryland), 11th – 13th November 2010.

C54. Magni L., **C. Toffanin**, G. De Nicolao, C. Dalla Man, J. Place, E. Renard, B. Kovatchev, C. Cobelli, Open-loop informed model predictive control for the artificial pancreas, 3rd International ATTD Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2010), Basel (Switzerland), 10th – 13th February 2010.

Patents (2)

P1. Soru P., L. Magni, C. Toffanin, G. De Nicolao, C. Dalla Man and C. Cobelli, Method for controlling the delivery of insulin and related system, Patent N. PCT/IT2012/000083, 23/3/2012, Patent N. 9836943, Type Grant, 20/01/2020.

P2. Soru P., L. Magni, C. Toffanin, G. De Nicolao, C. Dalla Man and C. Cobelli, Method for controlling the delivery of insulin and related system, Patent N. 9827371, Type Grant, 28/11/2017, Patent Publication Number 20150174322. https://patents.justia.com/patent/9827371

Book chapters (2)

B1. Del Favero S., Toffanin C., Magni L., Cobelli C. (2019). "Deployment of modular MPC for type 1 diabetes control: the Italian experience 2008–2016." The Artificial Pancreas, 1st edition, Current Situation and Future Directions, Academic Press, ISBN: 9780128156568. https://doi.org/10.1016/B978-0-12-815655-1.00016-8.

B2. Toffanin C., Cobelli C., Magni, L. (2022). "Adaptive and Individualized Artificial Pancreas for Precision Management of Type 1 Diabetes." Precision Medicine in Diabetes. Springer, Cham, ISBN: 9783030989262. https://doi.org/10.1007/978-3-030-98927-9_15

Talk and seminar organization

Nov 2022 — Organizer of the seminar entitled "A mathematical model of the G1/S transition for the budding yeast" held by Prof. Pasquale Palumbo for the Ph.D. School of Electronics, Computer Science and Electrical Engineering, University of Pavia, 15th November 2022

June 2022	Organizer of the seminar entitled "Coalitional control methods with applications to energy systems" held by Prof. Josè Maria Maestre Torreblanca for the Ph.D. School of Electronics, Computer Science and Electrical Engineering, University of Pavia, 13th June 2022
Dec 2018	Organizer of the invited session entitled "Glucose Regulation and Biomedical Systems" at the 57th IEEE Conference on Decision and Control, 17th – 19th December 2018
17/12/2018	Chair of the invited session entitled "Glucose Regulation and Biomedical Systems" at the 57th IEEE Conference on Decision and Control, 17th – 19th December 2018

Memberships in research projects

2023 - present	Project HORIZON-EIC-2022-PATHFINDERCHALLENGES-01, "Unobtrusive Continuous Multi Metabolite Monitoring for a Physiological Care of Insulin-treated Diabetes" (MuSiC4Diabetes), WP leader of WP4 "Multi-Metabolite Data Science", Scientific manager for the University of Pavia (315.262,50€)
2023 - present	Project PRIN22, "Adaptive Personalised Safe Artificial Pancreas for children and adolescents" (APS-AP), Principal Investigator (199.674€)
2022 - present	Project FET "A Bionic Invisible Pancreas To Forget Diabetes" (FORGETDIABETES), Scientific manager for the University of Pavia (45.000€)
2022 – present	Project PNRR "Nord Ovest Digitale E Sostenibile" (NODES), Leader of the Research Modules RM8 (Flagship project VINO) and RM5 (Flagship project FORMIDABILAE)
20/2/2019 – 19/2/2020	Project "Sviluppo di un tool di modellizzazione e simulazione dei gruppi di fasi (P/G) del controllore Fedegari per autoclavi", in collaboration with FEDEGARI AUTOCLAVI SpA, Scientific manager (30.000€)
24/1/2018 – 23/1/2019	Project "Sviluppo di un tool (TH4-PGMODEL) di modellizzazione e simulazione dei gruppi di fasi (P/G) del controllore THEMA4 per autoclavi", in collaboration with FEDEGARI AUTOCLAVI SpA, Scientific manager (30.000€)
5/4/2017 - 4/1/2018	Project "Prototipazione di un tool (TH4-PGMODEL) di modellizzazione e simulazione dei gruppi di fasi (P/G) del controllore THEMA4", in collaboration with FEDEGARI AUTOCLAVI SpA, Scientific manager (20.000€)
2016 - 2019	Project PRIN15: "Forget Diabetes: Adaptive Physiological Artificial Pancreas", Member of the research unit of the University of Pavia (53.726€)
2016 – 2018	Project IDENTIFY: "Characterization, modelling and simulation software tool of the magnetic field control loop for Fast Field Cycling (FFC) NMR", in collaboration with STELAR S.R.L., Member of the research unit of the University of Pavia (60.000€)
1/2/2010- 31/10/2014	European Project FP7-ICT-2009-4, "Bringing the Artificial Pancreas Home", Member of the research unit of the University of Pavia (863.321€)
1/12/2010- 30/11/2014	FIRB – Futuro in Ricerca, "Pancreas artificiale: sviluppo in silico e validazione in vivo di algoritmi per il controllo della glicemia", Member of the research unit of the University of Pavia (274.000€)
22/9/2008- 21/9/2010	Project PRIN07: Pancreas artificiale: modelli fisiologici, algoritmi di controllo e test clinico: "Algoritmi di controllo predittivo per il pancreas artificiale", Member of the research unit of the University of Pavia (47.000€)

Participation to committees

2021- present	Academic coordinator of Bachelor degree in Electronic and Computer Science Engineering, University of Pavia (Referente Corso di Laurea triennale in Ingegneria Elettronica e Informatica)
2022- present	Member of Steering Committee of the Faculty of Engineering ("Comitato direttivo della Facoltà di Ingegneria") for the period 2022-2025
2022-present	Coordinator of the tutoring projects "Automatic Control" and "Study groups for Electronic and Computer Science Engineering" at University of Pavia
10/05/2024	Member of the evaluation Committee of the Ph.D. candidates Marco Capelletti and Diego Locatelli at University of Pavia, Department of Electrical, Computer and Biomedical Engineering for the PhD course in "Electronics, Computer Science and Electrical Engineering"
21/12/2023	Member of the evaluation Committee of the Ph.D. candidate at University of Loyola Andalusia, Department of Engineering for the thesis entitled "Enhancing Smart and Sustainable Agriculture through Model Predictive Control Design and Implementation"
09-11/2022	Member of the evaluation Committee for the role of Assistant Professor (RTDa) at University of Pavia
05/2022	Member of the evaluation Committee for the role of Assistant Professor (RTDa) at IMT School for Advanced Studies Lucca
2018 - 2021	Member of the Department Council ("Giunta di Dipartimento")
2017 - present	Member of the Conference editorial board of the IEEE Control Systems Society (CSS), Associate Editor
2017 - present	Member of the board of teachers ("Collegio dei docenti") for the PhD course in "Electronics, Computer Science and Electrical Engineering", from cycle: XXXIII (academic year: 2017/2018)
07/12/2017	Member of the evaluation Committee of the Ph.D. candidate Konstanze Kolle at Norvegian University of Science and Technology, Department of Engineering Cybernetics for the thesis entitled "Towards a safe artificial pancreas: meal detection and the intraperitoneal route"

Awards and grants

2023	Winner of the CUIA fund for the workshop "Medicina in silico per il trattamento del diabete di tipo 1", 27th-28th April 2023, Santa Fe, Argentina
2022	Winner of the Best paper award for the work "Artificial pancreas under periodic MPC for trajectory tracking: handling circadian variability of insulin sensitivity" by Abuin P., A. Ferramosca, C. Toffanin, L. Magni, A.H. Gonzalez, at the 18th IFAC Workshop on Control Applications of Optimization (CAO22), Gif sur Yvette (France), 18th-22nd July 2022
2020	Winner of the Italian fund "Progetto Pavia – Boston 2020"
2017	Winner of the Italian fund "Finanziamento delle attività base di ricerca"
2015	Winner of postdoctoral fellowship at the Oxford University for high-throughput screen data analysis
2013	Finalist at MIMOS (Movimento Italiano Modellazione e Simulazione) competition, 3rd position in the contest for the best PhD thesis on the 3D, virtually and simulation topics

2011/2012	Residential scholarship for PhD and master student in the biomedical field

Teaching

Sep 2023 – present	Professor at University of Pavia on optimization for the MSc course entitled “advanced automation and control” (54h - 5 CFU)
Mar 2017 – present	Professor at University of Pavia on automatic controls for the MSc course entitled “Industrial Control” (24h - 1 CFU)
Sep 2016 – present	Professor at University of Pavia on automatic controls for the BSc course entitled “Controlli Automatici” (Automatic control – 26h - 1 CFU)
Mar 2017 – present	Professor at University of Pavia on automatic controls for the BSc course entitled “Fondamenti di automatica” (Fundamentals of automation – 72h - 6 CFU)
April 2016	Training course at University of Oxford on high throughput screening data analysis using HTScape, entitled “Training for compound screens and other TDI plated screens”
Sep 2014 - Jan 2015	Teaching assistant at University of Pavia on automatic controls for the BSc course entitled “Controlli automatici” (Automatic control)
	Teaching assistant at University of Pavia on computer science for the BSc course entitled “Fondamenti di informatica” (Fundamentals of computer science)
Feb – Sep 2014	Teaching assistant at University of Pavia on computer science for the BSc course entitled “Fondamenti di informatica” (Fundamentals of computer science)
Sep 2013– Jan 2014	Teaching assistant at University of Pavia on automatic controls for the BSc course entitled “Controlli automatici” (Automatic control)
Dec 2010 - Jan 2011	Teaching assistant at University of Pavia on industrial control for the MSc course entitled “Controllo Industriale” (Industrial control)
Jun – July 2010	Teaching assistant at University of Pavia on automatic controls for the BSc course entitled “Controlli automatici” (Automatic control)
Mar - Jun 2010	Teaching assistant at University of Pavia on industrial automation for the MSc course entitled “Automazione Industriale” (Industrial automation)
Mar - April 2010	Lecturer at University of Pavia on introduction of system modelling and control for the BSc course entitled “Introduzione all’analisi dei sistemi” (Introduction to system theory)
Dec 2009 - Jan 2010	Teaching assistant at University of Pavia on system theory for the BSc course entitled “Teoria dei sistemi” (System theory)
Dec 2009 - Jan 2010	Teaching assistant at University of Pavia on industrial control for the MSc course entitled “Controllo Industriale” (Industrial control)
Feb 2006 - Sep 2008	Teaching assistant at University of Pavia on computer science for the BSc course entitled “Fondamenti di informatica” (Fundamentals of computer science)

Oral presentation and seminars

Sept 2025	“Artificial Pancreas: challenges for safe and efficient glucose control”, SIDRA 2025: Convegno Annuale dei Docenti e Ricercatori Italiani in Automatica, Perugia, Italy, 3rd – 5th Sep, 2025

Jul 2025	"Artificial Pancreas: from invasive to adaptive, patient-tailored and portable control system ensuring safety", IMT School for Advanced Studies Lucca, Lucca, Italy, 21st July, 2025
Febr 2025	"Artificial Pancreas: from an invasive device to a portable, patient-tailored and adaptive control system ensuring safety", SUPSI, Lugano, Switzerland, 18th Feb, 2025
Sept 2023	"Personalized glucose regulation accounting for inter-individual and circadian variability", SIDRA 2023: Convegno Annuale dei Docenti e Ricercatori Italiani in Automatica, Catania, Italy, 6th – 8th Sep, 2023
Aug 2023	"Artificial Pancreas: From an Invasive Device to a Portable, Patient-Tailored and Adaptive Control System Ensuring Patient's Safety", Keynote speaker at ESAO 2023: the 49th Annual Congress of the European Society for Artificial Organs, Bergamo, Italy, 29th Aug – 1st Sep, 2023
Oct 2022	"Closed-loop control in diabetes for artificial pancreas", Workshop: Digital Health for Diabetes and its complications, Department of Electric, Computer and Biomedical Engineering, University of Pavia, Pavia, Italy, 14rd Oct, 2022
Oct 2022	"Artificial Pancreas: from an invasive device to a portable, patient-tailored and adaptive control system ensuring safety", ELE 601 Graduate Seminar, Department of Electrical, Computer, and Biomedical Engineering (ECBE), University of Rhode Island, Kingston, Rhode Island, USA, 7rd Oct, 2022
Apr 2021	"Artificial Pancreas: Evolution from an invasive device to a portable, patient-tailored and adaptive system ensuring safety", PhD program in Automatic Control, Bioengineering and Operations Research (ABRO), 2021 ABRO Course on Advances in Automatic Control - Health and Control, Dipartimento di Ingegneria Informatica, Automatica e Gestionale Antonio Riberti, Università di Roma La Sapienza, Rome, Italy, 23rd Apr, 2021
Apr 2021	"Artificial Pancreas: new challenges in T1D glucose control", Laurea Magistrale in Elettronica per l'Automazione e le Telecomunicazioni, Dipartimento di Ingegneria, Università degli Studi del Sannio di Benevento, Benevento, Italy, 21st Apr, 2021
Mar 2021	"Artificial Pancreas: new challenges in T1D glucose control", Dipartimento di Ingegneria Gestionale, dell'Informazione e della Produzione, Università degli Studi di Bergamo, Bergamo, Italy, 23rd Mar, 2021
Nov 2020	"Scalable model for industrial coffee roasting chamber", IEEE ISM 2019: International Conference on Industry 4.0 and Smart Manufacturing, 23rd Nov, 2020
Oct 2019	"Industry 4.0: Mathematical model for monitoring sterilization processes", IEEE SMC 2019: IEEE International Conference on Systems, Man, and Cybernetics - Industry 4.0, Bari, Italy, 6th Oct, 2019
Dec 2018	"Individualized Model Predictive Control for Type 1 Diabetes: the Pavia experience", Department of Engineering Cybernetics, Norwegian University of Science and Technology (NTNU), Trondheim, Norway, 6th Dec, 2018

Sept 2018	"Postprandial glucose regulation via KNN meal classification in type 1 diabetes", SIDRA 2018: Convegno Annuale dei Docenti e Ricercatori Italiani in Automatica, Florence, Italy, 12th – 14th Sep, 2018
Sept 2017	"Model Individualization for MPC based on Free-Living Conditions data", SIDRA 2017: Convegno Annuale dei Docenti e Ricercatori Italiani in Automatica, Milan, Italy, 11th – 13th Sep, 2017
Jul 2017	"Artificial Pancreas: From Control-To-Range to Control To-Target", 18th IFAC World Congress, Toulouse, France, 2017, 9-14 July, invited session entitled "Advances in Artificial Pancreas Control Systems"
Mar 2016	"HTScape: a tool/framework for HTS data analysis", University of Oxford, Department of Oncology, Oxford, UK, 11th Mar, 2016
Sep 2014	"Model Predictive Control for Artificial Pancreas: from in-silico to in-vivo", SIDRA 2014: Convegno Annuale dei Docenti e Ricercatori Italiani in Automatica, Bergamo, Italy, 8th – 10th Sep, 2014
Feb 2012	"Dynamic Insulin On Board", UCSB, University of California Santa Barbara, Santa Barbara, California, 2nd Feb, 2012
Aug 2011	"Model Predictive Control of Type 1 Diabetes added to Conventional Therapy", 18th IFAC World Congress, Milan, Italy, 2011, 28 Aug–2 Sep, invited session entitled "Modeling and Control for the Artificial Pancreas: a New Era in Glucose Regulation of People with Type 1 Diabetes Mellitus"
Feb 2011	"Clinical Software and demo for testing of different MPC controllers", AP@home project meeting, London, UK, 16th – 19th Feb, 2011

Supervision activity

Ph.D. students (8)

- Tutor of Matteo Ragni, Ph.D. student, University of Pavia. "Artificial pancreas: new identification techniques and advanced control approaches". Period 2024-present.
- Tutor of Martina Drecogna, Ph.D. student, University of Pavia. "Modelling and control of glucose response for type 1 diabetes subjects". Period 2023-present.
- Tutor of Sohail Anwar, Ph.D. student, University of Pavia. "Modelling and control of complex systems". Period 2023-present.
- Tutor of Paolo Alberto Mongini, Ph.D. student, University of Pavia. "Development of an artificial pancreas for an effective glucose regulation". Period 2023-present.
- Co-tutor of Irene Schimperna, Ph.D. student, University of Pavia. Period 2022-present.
- Tutor of Jorge Lo Presti, Ph.D. student, University of Pavia. "Control algorithms based on neural network". Period 2021-present.
- Tutor of Francesca Iacono, Ph.D. student, University of Pavia. "Modelling and Control of industrial processes". Period 2019-present.
- Tutor of Eleonora Maria Aiello, Ph.D. student, University of Pavia. "Control algorithms for Artificial Pancreas". Period 2016-2019. Currently Post-doc at Harvard University.

Master students (25)

- Advisor of Sajjad Fakhar Shahreza, Master Thesis in Industrial Automation Engineering, University of Pavia. “Adaptive formation control based on Sliding Mode Control for ASVs utilizing a decoupled observer”. Academic year 2023/2024.

- Advisor of Patrizio Ricciarelli, Master Thesis in Industrial Automation Engineering, University of Pavia. “Null space based behavior formation control applied to ASVs including obstacle avoidance”. Academic year 2023/2024.

- Advisor of Kimia Hassanzadeh Talouki, Master Thesis in Industrial Automation Engineering, University of Pavia. “Development of MPC for 4tanks system modeled by Koopman method”. Academic year 2023/2024.

- Advisor of Simone Viviani, Master Thesis in Industrial Automation Engineering, University of Pavia. “Adaptive formation control for USVs with collision and connectivity constraints exploiting decoupled observer”. Academic year 2023/2024.

- Advisor of Antonio Sabatini, Master Thesis in Industrial Automation Engineering, University of Pavia. “Active medical implants - Development of hardware and software interfaces for long-term insulin delivery”. Academic year 2023/2024.

- Advisor of Matteo Ragni, Master Thesis in Computer Science Engineering, University of Pavia. “Artificial Pancreas for Type 1 Diabetes: A Multiple Model approach for glucose prediction”. Academic year 2023/2024.

- Advisor of Alessandro Alini, Master Thesis in Industrial Automation Engineering, University of Pavia. “Integer Linear Programming to Optimize the Order Start Logic in an Automated Warehouse”. Academic year 2022/2023.

- Advisor of Paolo Alberto Mongini, Master Thesis in Industrial Automation Engineering, University of Pavia. “Design and implementation of a control system for dosing of chemical and cosmetic products”. Academic year 2022/2023.

- Advisor of Sara Macri, Master Thesis in Computer Science Engineering, University of Pavia. “Optimization of the Production of a Robotic Dosing System”. Academic year 2021/2022.

- Advisor of Gabriele Carmagnoli, Master Thesis in Industrial Automation Engineering, University of Pavia. “Artificial Pancreas: an in silico study of advanced Model Predictive Control strategies”. Academic year 2020/2021.

- Co-Advisor of Irene Schimperna, Master Thesis in Computer Science Engineering, University of Pavia. “Offset-free Nonlinear Model Predictive Control with LSTM neural networks”. Academic year 2021/2022.

- Advisor of Rebecca Franchi, Master Thesis in Industrial Automation Engineering, University of Pavia. “Artificial pancreas: toward a multiday run-to-run approach”. Academic year 2020/2021.

- Advisor of Andrea Marazzi, Master Thesis in Industrial Automation Engineering, University of Pavia. “Identificazione del modello di un autoclave per processi di sterilizzazione in vapor saturo”. Academic year 2019/2020.

- Advisor of Jorge Lo Presti, Master Thesis in Industrial Automation Engineering, University of Pavia. “Modelling of a pH neutralization process via recurrent neural networks: stability study and possible control applications”. Academic year 2019/2020.

- Advisor of Macha Dinesh Chandra Murthy, Master Thesis in Industrial Automation Engineering, University of Pavia. “Autoclave modelling: model definition and parameters optimization of the jacket subsystem”. Academic year 2019/2020.

- Advisor of Francesca Iacono, Master Thesis in Industrial Automation Engineering, University of Pavia. “Model of an autoclave in air-steam and saturated steam cycles: definition and parameters optimization”. Academic year 2017/2018.

- Advisor of Mattia Grecchi, Master Thesis in Computer Science Engineering, University of Pavia. “Individual model for artificial pancreas: identification from free-living condition data”. Academic year 2015/2016.

- Co-Advisor of Giacomo Galuppini, Master Thesis in Computer Science Engineering, University of Pavia. “Study for a Field Frequency Lock for FFC NMR applications”, Advisor Prof. Lalo Magni. Academic year 2015/2016.

- Co-Advisor of Andrea Mezzadra, Master Thesis in Computer Science Engineering, University of Pavia. “Identification of glucose-insulin models for MPC glucose control in Type 1 diabetic patients: a non-parametric approach”, Advisor Prof. Lalo Magni. Academic year 2013/2014.

- Co-Advisor of Eleonora Maria Aiello, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Identificazione di modelli per un pancreas artificiale tramite ottimizzazione vincolata”, Advisor Prof. Lalo Magni. Academic year 2013/2014.

- Co-Advisor of Luca Andreetta, Master Thesis in Computer Science Engineering, University of Pavia. “Identificazione non parametrica di modelli per la progettazione di un Pancreas Artificiale”, Advisor Prof. Lalo Magni. Academic year 2012/2013.

- Co-Advisor of Alice Sandri, Master Thesis in Computer Science Engineering, University of Pavia. “Individualizzazione automatica di terapie per la cura di pazienti diabetici di tipo 1”, Advisor Prof. Lalo Magni. Academic year 2012/2013.

- Co-Advisor of Mirko Messori, Master Thesis in Computer Science Engineering, University of Pavia. “Riprogettazione di uno schema di controllo predittivo per un Pancreas Artificiale a partire da dati clinici”, Advisor Prof. Lalo Magni. Academic year 2011/2012.

- Co-Advisor of Marcello Torchio, Master Thesis in Computer Science Engineering, University of Pavia. “Modellazione del segnale di rumore di un sensore di glicemia sottocutanea per lo sviluppo di un Pancreas Articiale”, Advisor Prof. Lalo Magni. Academic year 2011/2012.

- Co-Advisor of Paola Soru, Master Thesis in Computer Science Engineering, University of Pavia. “Stima di modelli lineari per il Pancreas Artificiale”, Advisor Prof. Lalo Magni. Academic year 2009/2010.

Bachelor students (73)

- Advisor of Fabio Colombo, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Studio e modellizzazione dell'effetto dell'esercizio fisico sulla dinamica glucosio-insulina in pazienti diabetici di tipo 1”. Academic year 2024/2025.

- Advisor of Giovanni Marazzi, Bachelor Thesis in Industrial Engineering, University of Pavia. “Progetto RoboCam strategie di gioco efficaci”. Academic year 2024/2025.

- Advisor of Beatrice Bella, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Progetto RoboCam: Elaborazione delle immagini perla navigazione dei robot”. Academic year 2024/2025.

- Advisor of Alessandro Premoli, Bachelor Thesis in Electronic Engineering, University of Pavia. “Studio e sviluppo di un sistema di controllo remoto per i robottini RoboCam”. Academic year 2023/2024.

- Advisor of Giulia Leone, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Progetto RoboCam: analisi delle immagini per la navigazione dei robot”. Academic year 2023/2024.

- Advisor of Giorgia Perfumo, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Analisi ed elaborazione del dataset OhioT1DM per l'addestramento di reti LSTM”. Academic year 2023/2024.

- Advisor of Martina Tartaglia, Bachelor Thesis in Industrial Engineering, University of Pavia. “Progetto RoboCam24: strategie di gioco”. Academic year 2023/2024.

- Advisor of Soufian Sadgal, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Reti LSTM per la predizione della glicemia in pazienti diabetici di tipo 1: analisi delle performance al variare degli iperparametri”. Academic year 2023/2024.

- Advisor of Daria Albanese, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Identificazione di modelli per la predizione della glicemia: caso studio con dati in vivo in condizioni di vita reale”. Academic year 2024/2025.

- Advisor of Anas Mohamed Aly Abouelsaoud Khedr, Bachelor Thesis in Electronic Engineering, University of Pavia. “Progetto RoboCam24: studio e integrazione di sensori per la navigazione”. Academic year 2023/2024.

- Advisor of Alessandro Galassi, Bachelor Thesis in Industrial Engineering, University of Pavia. “Progetto RoboCam24: Strategie di Gara”. Academic year 2023/2024.

- Advisor of Cristian Sandu, Bachelor Thesis in Industrial Engineering, University of Pavia. “Progetto RoboCam24: Dispositivi per la Navigazione”. Academic year 2023/2024.

- Advisor of Mattia Benevelli, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Reti LSTM per la predizione della glicemia: valutazione degli effetti congiunti e disgiunti di pasti e insuline”. Academic year 2022/2023.

- Advisor of Ana Movradin, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Studio ed implementazione di un modello sequence-to-sequence per la predizione della glicemia ai pazienti diabetici di tipo 1”. Academic year 2022/2023.

- Advisor of Gaia Rossotti, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Sviluppo di un sistema di allarme basato su reti LSTM per rilevare le ipoglicemie in pazienti diabetici mal regolati”. Academic year 2022/2023.

- Advisor of Mariarosaria Martinelli, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Studio di un approccio data driven per il rilevamento dei pasti non annunciati in pazienti diabetici”. Academic year 2022/2023.

- Advisor of Andrea Baraldi, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Sviluppo di un tool per la rilevazione dei pasti in pazienti diabetici di tipo 1”. Academic year 2022/2023.

- Advisor of Andra Roman, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Sviluppo di un sistema di allarme per le ipoglicemie basato su reti neurali LSTM”. Academic year 2022/2023.

- Advisor of Edoardo Giani, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Sviluppo di un sistema di rilevamento dei pasti non annunciati in pazienti diabetici”. Academic year 2022/2023.

- Advisor of Federico Romano, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Progetto RoboCam: descrizione della fotocamera e dei sensori e loro utilizzo per la navigazione del robot”. Academic year 2022/2023.

- Advisor of Federica Tetta, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Predizione della glicemia per pazienti diabetici: gestione della variabilità intra-giornaliera con approccio multi-modello”. Academic year 2022/2023.

- Advisor of Matteo Pilotti, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Studio di reti LSTM per la predizione della glicemia in pazienti diabetici di tipo 1”. Academic year 2022/2023.

- Advisor of Gabriele Invernizzi, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Progetto RoboCam: definizione della strategia di gioco e sua modellizzazione tramite macchine a stati finiti”. Academic year 2022/2023.

- Advisor of Rebecca Maccagni, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Progetto RoboCam: studio del sensore LIS3MDL per la navigazione del robot”. Academic year 2022/2023.

- Advisor of Agnese Filippini, Bachelor Thesis in Electronic Engineering, University of Pavia. “Progetto RoboCam: descrizione dell'hardware e studio dei componenti del robottino”. Academic year 2022/2023.

- Advisor of Stefano Martelli, Bachelor Thesis in Electronic Engineering, University of Pavia. “Studio e addestramento di reti LSTM per la predizione della glicemia in pazienti affetti da diabete di tipo 1”. Academic year 2022/2023.

- Advisor of Pierpaolo Lombardi, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Progetto RoboCam: studio dei motori in corrente continua per l'azionamento delle ruote”. Academic year 2022/2023.

- Advisor of Rita Vittone, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Ottimizzazione della soglia per il rilevamento dei pasti non annunciati in pazienti diabetici”. Academic year 2022/2023.

- Advisor of Giada Cecere, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Test in silico di un modello lineare tempo-variante glucosio-insulina per il controllo della glicemia”. Academic year 2022/2023.

- Advisor of Angelica Calia, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Studio della variabilità della sensibilità insulinica in pazienti affetti da diabete di tipo 1”. Academic year 2022/2023.

- Advisor of Denis Byku, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Pancreas artificiale: la rivoluzione nel trattamento del diabete di tipo 1”. Academic year 2022/2023.

- Advisor of Sofia Del Vento, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Sistema di rilevamento dei pasti non annunciati per pazienti affetti da diabete di tipo 1”. Academic year 2021/2022.

- Advisor of Antonio Sabatini, Bachelor Thesis in Industrial Engineering, University of Pavia. “Sistema di rilevamento dei pasti non annunciati per pazienti affetti da diabete di tipo 1”. Academic year 2021/2022.

- Advisor of Luca Maurice Lombardi, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Modelli glucosio-insulina: gestione della variabilità intra-individuale”. Academic year 2021/2022.

- Advisor of Matteo Ragni, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Progettazione di un sistema di controllo per la manovra di un’imbarcazione tramite regolatori PI con schemi di disaccoppiamento”. Academic year 2020/2021.

- Advisor of Denaldo Gjerkaj, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Identificazione di un modello a scatola nera per il controllo dell’ossigeno in un impianto di depurazione”. Academic year 2020/2021.

- Advisor of Emanuele Cardinale, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Rete LSTM per la predizione della glicemia: addestramento su paziente in silico per il Pancreas Artifciale”. Academic year 2021/2022

- Advisor of Pietro Leoncini, Bachelor Thesis in Biomedical Engineering, University of Pavia. “OhioT1DM dataset: analisi ed elaborazione dati per l’addestramento di reti neurali LSTM”. Academic year 2021/2022

- Co-Advisor of Giacomo Licchetta, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Uno sguardo al mondo delle reti neurali: confronto fra Long Short-Term Memory e Temporal Convolutional Networks”. Academic year 2021/2022

- Advisor of Grecya D’Angiò, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Addestramento di una rete neurale LSTM per la simulazione di un processo di acque reflue”. Academic year 2020/2021.

- Advisor of Emanuela Morello, Bachelor Thesis in Biomedical Engineering, University of Pavia. “OhioT1DM dataset: studio di una base dati consistente per future applicazioni biomediche”. Academic year 2021/2022

- Advisor of Valeria Rita Orlando, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Sviluppo e analisi di reti neurali LSTM per la predizione di picchi ipoglicemici in pazienti diabetici di tipo 1”. Academic year 2019/2020.

- Advisor of Mattia Scivola, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Studio e sviluppo di reti neurali per sistemi dinamici tramite Python”. Academic year 2019/2020.

- Advisor of Sara Lanzarone, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Reti LSTM personalizzate per il pancreas artificiale: valutazione delle performance in un caso studio in silico”. Academic year 2019/2020.

- Advisor of Davide Malerba, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Reti neurali ricorrenti: studio di reti LSTM e possibili applicazioni”. Academic year 2019/2020.

- Advisor of Chiara Maria Buffoni, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Modelli per il pancreas artificiale: studio di reti LSTM”. Academic year 2019/2020.

- Advisor of Alessandro Scarpelli, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Modello intraperitoneale per la cinetica dell’insulina nel diabete di tipo 1”. Academic year 2019/2020.

- Advisor of Eleonora Trapani, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Identificazione in silico di modelli glucosio - insulina intraperitoneale: analisi della tempo-varianza e delle non linearità”. Academic year 2019/2020.

- Advisor of Alessandro Alini, Bachelor Thesis in Electronic Engineering, University of Pavia. “Modellizzazione e controllo tramite un regolatore PID di un piano basculante”. Academic year 2019/2020.

- Advisor of Serena Marino, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Identificazione in silico di modelli glucosio-insulina per pazienti diabetici di tipo 1 trattati con terapia intraperitoneale”. Academic year 2019/2020.

- Advisor of Lara Ronga, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Terapie insuliniche per il diabete mellito di tipo I: differenze tra somministrazione sottocutanea e intraperitoneale”. Academic year 2019/2020.

- Advisor of Simone Rancati, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Pancreas artificiale personalizzato: predizioni della glicemia di un paziente diabetico di tipo 1 tramite un multi-modello”. Academic year 2019/2020.

- Advisor of Eleonora Luppi, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Pancreas artificiale adattativo: analisi in-silico dei dati clinici e proposta di miglioramento della velocità di convergenza della terapia diurna”. Academic year 2019/2020.

- Advisor of Irene Schimperna, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Studio di reti neurali LSTM per l'identificazione di modelli di sistemi dinamici”. Academic year 2019/2020.

- Advisor of Virginia Sampognaro, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Pancreas artificiale adattativo: analisi in-silico di dati clinici e proposta di miglioramento della velocità di convergenza della terapia notturna”. Academic year 2019/2020.

- Advisor of Martina Suppa, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Pancreas artificiale adattativo: analisi in-silico di dati clinici e proposta di miglioramento dell'algoritmo di controllo”. Academic year 2019/2020.

- Advisor of Alessandro Ferrari, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Identificazione del multi-modello di un paziente diabetico di tipo 1 per lo sviluppo di un pancreas artificiale”. Academic year 2019/2020.

- Advisor of Lucia Mantova, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Miglioramento e personalizzazione dell’algoritmo adattativo utilizzato per la taratura della terapia insulinica intraperitoneale di una popolazione di 100 pazienti virtuali”. Academic year 2018/2019.

- Advisor of Sara Macri, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Modellizzazione e controllo di un piano basculante affetto da non linearità”. Academic year 2018/2019.

- Advisor of Davide Vairetti, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Sviluppo e validazione di un’interfaccia utente per la sperimentazione animale di un pancreas artificiale con infusione intraperitoneale”. Academic year 2018/2019.

- Advisor of Andrea Pigozzi, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Ottimizzazione della terapia insulinica basale in pazienti affetti da diabete di tipo 1 caratterizzati da variabilità di tipo intra- e inter-day”. Academic year 2018/2019.

- Advisor of Daniele Viola, Bachelor Thesis in Electronic and Telecommunication Engineering, University of Pavia. “Modellizzazione e controllo di un piano basculante”. Academic year 2018/2019.

- Advisor of Elisa Setti, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Definizione della terapia insulinica ottimale somministrata per via intraperitoneale in maialini diabetici alimentati per via intravenosa”. Academic year 2018/2019.

- Co-Advisor of Roberto Gallotta, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Uso di reti neurali per la previsione della glicemia per pazienti diabetici”. Academic year 2017/2018.

- Advisor of Alessia Gerbasi, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Identificazione di multi-modelli metabolici individualizzati per pazienti diabetici di tipo 1”. Academic year 2017/2018.

- Advisor of Roberto Di Matteo, Bachelor Thesis in Biomedical Engineering, University of Pavia. “Identificazione di multi-modelli metabolici individualizzati per pazienti diabetici di tipo 1”. Academic year 2017/2018.

- Advisor of Riccardo Merlano, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Studio dei fattori che influenzano la risposta al pasto durante la sperimentazione di un pancreas artificiale nel centro clinico Amsterdam”. Academic year 2016/2017.

- Advisor of Claudio Vitelli, Bachelor Thesis in Electronic Engineering, University of Pavia. “Studio dei fattori che influenzano la risposta al pasto durante la sperimentazione di un pancreas artificiale nel centro clinico Montpellier”. Academic year 2016/2017.

- Advisor of Francesco Carella, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Studio di tecniche per la taratura automatica di un PID per il controllo del vapore in un autoclave”. Academic year 2016/2017.

- Co-Advisor of Federica Chiesa, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Identificazione di Modelli Lineari per il Pancreas Artificiale”, Advisor Prof. Lalo Magni. Academic year 2013/2014.

- Co-Advisor of Simone Mancini, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Sviluppo e validazione di un’interfaccia per la sperimentazione clinica di un Pancreas Artificiale”, Advisor Prof. Lalo Magni. Academic year 2010/2011.

- Co-Advisor of Marco Acquistapace, Bachelor Thesis in Computer Science Engineering, University of Pavia. “Modelli del sistema glucosio-insulina per pazienti diabetici di tipo 1 basati sulla risposta impulsiva”, Advisor Prof. Lalo Magni. Academic year 2009/2010.

- Co-Advisor of Gabriele Tiberti, Bachelor Thesis in Computer Science Engineering, University of Pavia. "Sistema di telemedicina per Pancreas Artificiale: predisposizione in tempo reale dei dati acquisiti da trasmettere", Advisor Prof. Lalo Magni. Academic year 2009/2010.

Editor and Referee Activity

- Associate Editor of IEEE Transactions on Control Systems Technology.
- Associate Editor of Clinical Diabetes, special section of Frontiers in Endocrinology, Frontiers in Public Health, Frontiers in Neuroscience and Frontiers in Nutrition.
- Reviewer Editor of Control and Automation Systems within the journal Frontiers in Control Engineering.
- Guest editor of the special issue entitled "Recent Advances in Computer Simulation for Diabetes Treatment and Care" in the Frontiers in Endocrinology.
- Referee in the Bioengineering field (Science, Nature, Nature Communications, IEEE Transactions on Biomedical Engineering, IEEE Journal of Biomedical and Health Informatics, Journal of Diabetes Science and Technology, Diabetes Technology and Therapeutics, Computers in Biology and Medicine, Computer Methods and Programs in Biomedicine, Journal of Diabetes Research, Journal of Medical Research and Innovation Diabetes, Engineering Science and Technology an International Journal, Biocybernetics and Biomedical Engineering, Sensors, Biomedical Signal Processing and Control, Journal of Healthcare Engineering, JMIR Diabetes, IEEE Open Journal of Engineering in Medicine and Biology).
- Referee in the Automatic Control field (IEEE Transactions on Automatic Control, IEEE Transactions on Systems, Man and Cybernetics Systems, Engineering Applications of Artificial Intelligence, Journal of Process Control, Optimal Control Applications and Methods, Complexity Journal, Mathematical Problems in Engineering, Transactions on Control Systems Technology, Transactions on Computational Social Systems, IEEE Access, Nonlinear Analysis Hybrid Systems, Robust and Nonlinear Control, Expert Systems With Applications).
- Conferences Referee in the Automatic Control field (IEEE Conference on Decision and Control – CDC, International Federation of Automatic Control World Conference – IFAC, American Control Conference – ACC, IFAC Conference on Nonlinear Model Predictive Control, International Symposium on Mathematical Theory of Networks and Systems, IEEE International Conference on Systems, Man, and Cybernetics, International Symposium on Mathematical Theory of Networks and Systems, IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems, IFAC Workshop on Control Applications of Optimization).
- Conferences Referee in the Bioengineering field (IFAC Symposium on Biological and Medical Systems).

Skills

Software/programming skills	Excellent: Matlab, GUI development (Matlab)
	Medium: R, Java, Python, Django, SQL
	Sufficient: SPSS, C language, Xml, xls, css, hibernate, javascript, jsp, Liferay technology
Organizational skills	Good organizational skills
Social skills	Good skills to work in team
Languages	Italian (native language), English (medium level)

Driving license	Driving License B (car)

Extra-curriculum activities

2007 – 2009	Technical assistance and software developer for a financial web portal Noema STI srl – Viale Brambilla, n. 58 27100 Pavia (Italy) http://www.noema.it
Jun 2007 - Oct 2007	Internship: training and development of web portal using Liferay technology Noema STI srl – Viale Brambilla, n. 58 27100 Pavia (Italy) http://www.noema.it

Personal interests

Dancing, traveling, skating, biking, watching movies, reading

Date

08 / 01 / 2026

Signature

Chiara Toffanin