

# Curriculum Vitae

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*Alessandro D’Innocenzo, PhD*

**Address:** Department of Information Engineering, Computer Science and Mathematics - University of L’Aquila. Via Vetoio, Coppito - 67100 L’Aquila (AQ) – Italy. Office: +39 0862 434461, Cell: +39 320 774 5349.

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## Education

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- **April 2<sup>nd</sup>, 2007:** Accomplishment of the International Curriculum Option of Doctoral Studies in Hybrid Control for Complex, Distributed and Heterogeneous Embedded Systems.
- **January 29<sup>th</sup>, 2007:** PhD Degree in Electrical and Information Engineering, Department of Electrical and Information Engineering, University of L’Aquila, Italy. *Title:* Observability and Temporal Properties of Hybrid Systems: Analysis and Verification. *Advisor:* Prof. M.D. Di Benedetto. *PhD Commission:* Prof. M.D. Di Benedetto, Prof. M.G. Di Benedetto, Prof. N. Benvenuto, Prof. G.J. Pappas.
- **From November 2003 to January 2007:** PhD student at the Department of Electrical and Information Engineering, University of L’Aquila, Italy.
- **July 21<sup>st</sup>, 2000:** Laurea Degree in Electronic Engineering, Department of Electrical Engineering, University of L’Aquila, Italy. 110/110 *cum laude*.
- **June 1994:** High School Diploma, Liceo Scientifico F. Masci, Chieti, Italy. 60/60.

## Foreign Languages

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- English and German (fluent)

## Work Experience

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**Since February 2020: Professore Associato (Associate Professor)** *Department of Information Engineering, Computer Science and Mathematics, Centre of Excellence DEWS, University of L’Aquila.*

**February 2017 - January 2020, Ricercatore a tempo determinato tipo-b (Assistant Professor type-b):** *Department of Information Engineering, Computer Science and Mathematics, Centre of Excellence DEWS, University of L’Aquila.*

**January 2010 – January 2017 Ricercatore a tempo determinato (Assistant Professor):** *Department of Information Engineering, Computer Science and Mathematics, Centre of Excellence DEWS, University of L’Aquila.*

**January 2007 - December 2009, Post-Doc:** *Centre of Excellence DEWS, University of L’Aquila. Prof. M.D. Di Benedetto.*

**March – December 2008, Post-Doc:** *Department of Electrical and Systems Engineering, University of Pennsylvania.* Prof. G.J. Pappas.

**July 2005 – December 2006, Consultant:** *Centre of Excellence DEWS, University of L'Aquila.* HYCON Project, *Hybrid Control: Taming Heterogeneity and Complexity of Networked Embedded Systems*, IST, Network of Excellence, contract n.511368.

**January 2003 – December 2004, Consultant:** *Centre of Excellence DEWS, University of L'Aquila.* Distributed Control and Stochastic Analysis of Hybrid Systems Supporting Safety Critical Real-Time Systems Design Project IST-2001-32460 HYBRIDGE.

**May – June 2004, Consultant:** *Department of mathematics “Federigo Enriques”, University of Milano.* Topological interpretations of the transformations of a rectangle: cylinder, torus, Moebius strip, projective plan.

**March 2002 – December 2003, Consultant:** *Digital Video S.r.l., Roma.* Computer Graphics Programming.

**October 2000 – December 2004, Employee:** *Marconi S.p.a., Chieti.* Communication Systems (Simulation and control of the RANAP communication layer in UMTS networks): Software Engineer.

**September 2000, Post-thesis stage:** *Telecom Italia Lab, Torino.* Voice over IP – Circuit network gateway.

**September 1999 – July 2000, Industrial Thesis:** *Telecom Italia Lab, Torino.* Voice over IP – Circuit network gateway.

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## ***Awards and Qualifications***

- 2019: National scientific qualification as Professor (Professore di I fascia) in Control Theory
- 2015: Best Application Paper Award, 14th annual European Control Conference (ECC'15)
- 2014: National scientific qualification as Associate Professor (Professore di II fascia) in Control Theory
- 2014: Elsevier Certificate of Excellence in reviewing.
- 2005: “Fondazione Filauro” Scholarship, University of L'Aquila, Italy.
- 1994 - 1999: Student scholarships, University of L'Aquila, Italy.

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## ***Editorial Activities***

- 1<sup>st</sup> International Conference on Wireless Sensor Networks (WSN'12), Program Committee
- 12<sup>th</sup> European Control Conference (ECC'13), Program Committee Member
- 4<sup>th</sup> IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys'13), Program Committee Member
- 13<sup>th</sup> European Control Conference (ECC'14), Associate Editor
- 14<sup>th</sup> European Control Conference (ECC'15), Associate Editor
- 5<sup>th</sup> IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys'15), International Program Committee Member

- ACM International Conference on Hybrid Systems: Computation and Control (HSCC'16), Program Committee Member
- 15<sup>th</sup> European Control Conference (ECC'16), Associate Editor
- ACM International Conference on Hybrid Systems: Computation and Control (HSCC'17), Program Committee Member
- Workshop on COMMUNICATION AND NETWORKING TECHNIQUES FOR CONTEMPORARY VIDEO, IEEE International Conference on Computer Communications (IEEE INFOCOM'17), Program Committee Member
- 16<sup>th</sup> European Control Conference (ECC'18), Associate Editor
- 6<sup>th</sup> IFAC Conference on Analysis and Design of Hybrid Systems (ADHS'18). International Program Committee Member
- 7<sup>th</sup> IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys'18). Associate Editor
- 17<sup>th</sup> European Control Conference (ECC'19), Associate Editor
- 13<sup>th</sup> International Conference on Reachability Problems RP'19), Program Committee member
- 18<sup>th</sup> European Control Conference (ECC'20), Associate Editor

Since 2005 reviewer for the most relevant conferences and journals in the control, computer science and communication scientific communities.

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## *Research Projects*

- **AIM1877124-1** (PON2014-2020, D.D. n. 407 del 27.02.2018), financed by MIUR for the recruitment of a “Ricercatore tempo determinato tipo a”. **Scientific referent.**
- **FFABR2017**, funded by MIUR.
- **S.A.F.E.:** DESIGN SOSTENIBILE DI SISTEMI DI ARREDO CON FUNZIONE SALVAVITA DURANTE EVENTI SISMICI (PNR 2015-2020, di cui al D.D. del 13 luglio 2017 n. 1735), financed by MIUR. **Scientific responsible.**
- **INCIPICT:** INnovating CIty Planning through Information and Communication Technologies. Funded by the Italian Government under Cipe resolution n.135, Dec. 21, 2012. **Management committee member.**
- **SAFECOP:** Safe Cooperating Cyber-Physical Systems using Wireless Communication. ECSEL PAB 2015.15 - Funding Call 2015-1. **Researcher.**
- **AQUAS:** Aggregated QUality Assurance for Systems. ECSEL Research and Innovation Actions (RIA) - Calls 2016. **Researcher.**
- **“Model based methods for fault detection and control of the Telecom Italia service provider network”** (2013-2015), funded by Telecom Italia. **Scientific responsible.**
- **HYCON2:** Highly-complex and networked control systems. EU FP7 NoE, 2010-2014. **Responsible Univ. of L’Aquila.**
- **MAREA:** Mathematical approach towards resilience engineering in ATM. SESAR WP-E, 2011-2013. **Researcher.**
- **iFly:** Safety, Complexity and Responsibility based design and validation of highly automated Air Traffic Management. EU FP6 STREP, 2007-2011. **Responsible Univ. of L’Aquila from Month 1 to Month 24.**
- **PRIN05:** Forecast and control systems for landslides: local sensor distributed networks integration, monitoring techniques and hydro-geological models. MIUR, 2006-2007. **Researcher.**

- **HYCON:** Hybrid Control: Taming Heterogeneity and Complexity of Networked Embedded Systems. EU FP6 NoE, 2004-2008. **Responsible Univ. of L'Aquila.**
- **HYBRIDGE:** Distributed Control and Stochastic Analysis of Hybrid Systems Supporting Safety Critical Real-Time Systems Design. EU FP5 STREP, 2002-2005. **Researcher.**

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## *Transfer of Technology*

- **Principal investigator** of the Remote Environmental Monitoring (REM) business project, which passed the first and second phase of the RICOSTRUIRE call for entrepreneurial ideas. 2013-2015

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## *Invited plenary lectures*

**September 22, 2015:** Invited plenary speaker in the 9th International Workshop on Reachability Problems (RP'15). Warsaw, Poland, September 21-23, 2015.

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## *Invited lectures in Workshops*

**January 10, 2017:** Invited speaker in the WORKSHOP on “HYBRID DYNAMICAL SYSTEMS: OPTIMIZATION, STABILITY AND APPLICATIONS”, University of Trento.

**October 27, 2016:** Invited speaker in the Co4 Workshop on "Control subject to Computational and Communication Constraints", Toulouse.

**June 24, 2014:** Tutorial on “Modeling, analysis and design over wireless networking protocols for control tasks”, Workshop on "Control of large-scale distributed and cooperating systems", 13th European Control Conference.

**April 12<sup>th</sup> 2010:** *Probabilistic Model checking of Stochastic Hybrid Systems by Abstraction and application to air traffic management*, given at the Workshop on Modeling and Verification of Uncertain Hybrid Systems, affiliated event of Cyber-physical Systems Week CPS2010, Stockholm.

**November 3<sup>rd</sup> 2009:** *Observability and Diagnosability of Hybrid Automata, and their application in Air Traffic Management*, given at the Workshop on Formal Methods in Aerospace, affiliated event of Formal Methods Week FM2009, Eindhoven.

**April 30<sup>th</sup> 2009:** *Wireless mining ventilation control: a HYCON test case for networked control*, given at the INTERNATIONAL WORKSHOP ON HYBRID AND PREDICTIVE CONTROL FOR NONLINEAR INDUSTRIAL APPLICATIONS, University of Strathclyde, Glasgow, April 28-30, 2009.

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## *Invited lectures*

**September 28, 2016:** Seminar on "Modeling and Co--design of Control Tasks over Wireless Networking Protocols", University of Pennsylvania, Philadelphia PA

**May 3, 2016:** Seminar on "Modeling and Co-design of Control Tasks over Wireless Networking Protocols", University of Oxford.

**February 23, 2016:** Seminar on "Modeling and Co--design of Control Tasks over Wireless Networking Protocols", TU-Berlin.

**March 4, 2014:** Invited seminar on "Formal methods for analysis and co-design of Wireless Networked Control Systems", given at the Centre for Systems Engineering and Applied Mechanics, Universite' Catholique de Louvain (UCL), Louvain-la-Neuve, Belgium.

**February 5, 2014:** Seminar on "Modelling, Analysis, Design and Fault Detection in Wireless Networked Control Systems", given at Siemens AG, München, Germany.

**June 10, 2013:** Seminar on "Fault tolerant control of multi-hop control networks", given at the Department of Electrical, Computer, and Systems Engineering, Rensselaer Polytechnic Institute, Troy NY.

**February 9, 2012:** Minicourse on *Modeling, analysis and design of multi-hop control networks*, given at the Department of Mechanical Engineering, Eindhoven University of Technology (TU/e), Eindhoven, Netherlands.

**December 6<sup>th</sup> 2011:** *Modeling, analysis and design of multi-hop control networks*, invited seminar given at the Centre for Systems Engineering and Applied Mechanics (CESAME), UCL - Université catholique de Louvain (UCL), Louvain-la-Neuve, Belgium.

**October 7<sup>th</sup> 2008:** *Finite approximate abstractions of Stochastic Hybrid Automata*, given at the University of Pisa, College of Engineering, Pisa, Italy.

**June 26<sup>th</sup> 2008:** *Wireless mining ventilation control: a HYCON test case for networked control*, given at the MIT, Lisbon, Portugal.

**January 31<sup>st</sup> 2008:** *Finite Abstractions of Hybrid Automata*, given at the KTH School of Electrical Engineering, Stockholm, Sweden.

**November 19<sup>th</sup> 2007:** *Observability and diagnosability of hybrid systems*, given at the IASI-CNR Institute (Istituto di Analisi dei Sistemi ed Informatica "A. Ruberti"), Rome.

**September 8<sup>th</sup> 2006:** *A Theoretical Framework for Control over Wireless Networks*, given at the NEWCOM-HYCON Technical Workshop on Embedded Systems and Infrastructureless Networks, Laboratoire des Signaux et Systemes, Centre National de la Recherche Scientifique, Supelec.

**June 20<sup>th</sup> 2006:** *On the observability problem for hybrid systems*, given at the Laboratoire des Signaux et Systemes, Centre National de la Recherche Scientifique, Supelec. Gif-sur-Yvette, France.

**May 22<sup>nd</sup> 2006:** *A Theoretical Framework for Control over Wireless Networks*, given at the NEWCOM-HYCON Technical Workshop on Embedded Systems and Infrastructureless Networks, Florence, Italy

**February 16<sup>th</sup>-17<sup>th</sup> 2006:** *Modeling of adaptive behaviors in control over wireless networks*, given at the Hycon WP4d meeting, PARADES, Rome, Italy

**February 8<sup>th</sup> 2006:** *Observability of Hybrid Automata by Abstraction*, given at the Department of Electrical and Systems Engineering of the University of Pennsylvania (Philadelphia)

**December 6<sup>th</sup> 2005:** *Observability of Hybrid Automata by Abstraction*, given at the EECS Department of the University of California Berkeley.

**February 21<sup>st</sup> 2005:** *Observability of Hybrid Systems and Application to Air Traffic Management*, given at the Grasp Lab, Department of Electrical and Systems Engineering, University of Pennsylvania.

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## *Tutoring*

### Currently supervised “Ricercatori tipo a”:

- F. Smarra: Disaster Resilience and Energy Efficiency in Building Automation Systems (within INCIPICT Project)
- V. De Iuliis, Model identification for large-scale Cyber-Physical

### Currently supervised Post-Docs:

- G.D. Di Girolamo, Resilience and Energy Efficiency in Building Automation Systems (within INCIPICT Project), Scientific Responsible

### Former Post-Docs:

- Y. Zacchia Lun, now Scientific Collaborator @ IMT Lucca
- F. Smarra, now Assistant Professor @ University of L’Aquila
- V. De Iuliis, now Assistant Professor @ University of L’Aquila

### Currently supervised PhD students:

- J. Tjen, 3<sup>st</sup> year PhD student.
- E. Reticcioli, 3<sup>st</sup> year PhD student, co-tutored with Prof. F. Graziosi.
- A. Impicciatore, 1<sup>st</sup> year PhD student, co-tutored with Prof. P. Pepe.
- L. Florenzan, 1<sup>st</sup> year PhD student

### Supervised PhD theses:

- Y. Zacchia Lun. **Stability and optimal control of polytopic time-inhomogeneous Markov jump linear systems.** PhD Thesis, Gran Sasso Science Institute, September 2017
- G.D. Di Girolamo. **Co-design of controllers and information flows in networked control systems.** PhD Thesis, Department of Information Engineering, Computer Science and Mathematics, University of L’Aquila, July 2017
- F. Smarra. **Fault Tolerant Control of Multi-hop Networked Control Systems.** PhD Thesis, Department of Information Engineering, Computer Science and Mathematics, University of L’Aquila, April 2014.
- E. Serra. **Design & Verification of Multi-Hop Networked Control Systems.** PhD Thesis, Department of Electrical and Information Engineering, University of L’Aquila, March 2011.

### Supervised master theses:

1. L. Florenzan. **Energy-efficient power control in Communication Networks via Machine Learning**. Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica, Università degli Studi dell'Aquila, 2019
2. A. Impicciatore. **Stability analysis of wireless control networks via switching systems theory**. Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica, Università degli Studi dell'Aquila, 2019.
3. M. Mazurek. **Development of the Active Radiation Monitoring System of the LHCb Experiment at CERN**. Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica, Università degli Studi dell'Aquila, 2019. In collaboration with CERN, Geneva.
4. S. Abdufattokhov. **Data-driven Model Predictive Control using Gaussian Processes for Energy Efficient Building Management: A 'House in the Forest' Case Study**. Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica, Università degli Studi dell'Aquila, 2018.
5. A. Pandey. **Data-driven Model Predictive Control for Building Energy Optimization: A 'House in the Forest' Case Study**. Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica, Università degli Studi dell'Aquila, 2018.
6. J. Tjen. **Data-Predictive Control for Energy Efficient Building Management: Implementation on A Building of the University of L'Aquila**. Master Thesis, Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, 2017
7. E. Reticcioli. **Design and integration of a low-cost device for people counting in a SCADA building automation system**. Master Thesis, Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, 2017
8. Ibrahim. **Validation of a Model Predictive Control Algorithm for Priority-Based Routing**. Master Thesis, Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, 2016.
9. Mehrabi. **QoE based optimal control of priority queuing in a service provider network**. Master Thesis, Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, 2015.
10. Veeraraghavan. **Modeling of Traffic Congestion in a QoS Based Service Provider Network**. Master Thesis, Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, 2014.
11. Di Loreto. **Modellazione dell'effetto dei guasti nel Backbone di Telecom Italia sulla qualità dei servizi agli utenti**. Master Thesis (in Italian), Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, 2013.
12. G.D. Di Girolamo. **Sincronizzazione di clock su reti WirelessHART usando algoritmi di consenso**. Master Thesis (in Italian), Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, 2013.
13. R. Lalli. **Controllo della temperatura mediante l'uso di reti wireless negli "smart buildings"**. Master Thesis (in Italian), Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, 2012.
14. S. Ferella. **Security di reti wireless: modellistica e analisi per sistemi MIMO**. Master Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, 2011.
15. M. Cecamore. **Analisi Formale e Progettazione di Procedure di Sicurezza in Infrastrutture Critiche Mediante la Tecnologia Bluetooth Low Energy**. Master Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, 2011.
16. G. Cacciavillani. **Analisi formale e progettazione di procedure di sicurezza in infrastrutture critiche mediante l'uso di NFC**. Master Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, 2011.

17. Di Domenico. **Analisi stocastica della stabilità di reti di controllo multi-hop con perdita di pacchetti.** Master Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, 2011.
18. N. Dell'Aquila. **Ottimizzazione della potenza di trasmissione per un sistema di controllo soggetto ad errori di comunicazione e quantizzazione.** Master Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, 2011.
19. Alessandri **Modellistica e analisi di problemi di security per sistemi di controllo su reti wireless.** Master Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, 2011.
20. Di Camillo. **Realizzazione di una Classe in C++ per la Costruzione Automatica di un Osservatore per Sistemi ad Eventi Discreti.** Master Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, 2011.
21. Marchegiani. **Controllo robusto di un veicolo mediante controllo digitale self-triggered.** Master Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, 2011.
22. G. Di Matteo. **Model checking probabilistico di procedure di controllo del tra-co aereo.** Master Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, 2009.
23. P. Proia. **Implementazione in linguaggio C++ della semantica "Hybrid System Interchange Format" per sistemi ibridi.** Master Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, July 2008.
24. L. Riccucci. **Analisi del consumo di potenza in un sistema di controllo della ventilazione di una miniera.** Master Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, June 2008.
25. Petriccone. **Modelli ibridi per la rappresentazione di procedure di controllo del traffico aereo.** Master Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, April 2008.
26. M. Colageo. **Hybrid modeling and observability analysis of the ATSA-In Trail Procedure.** Master Thesis (in English), Department of Electrical Engineering and Computer Science, University of L'Aquila, April 2008.
27. Di Francesco. **Hybrid observability analysis in an air traffic management multi-agent environment.** Master Thesis (in English), Department of Electrical Engineering and Computer Science, University of L'Aquila, April 2008.

#### **Supervised bachelor theses:**

1. **L. De Tomasi.** Confronto tra tecniche basate su reti neurali ed alberi di regressione per l'identificazione di modelli di Building Management Systems. Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica, Università degli Studi dell'Aquila, 2018.
2. R. Serino. **Rilevamento persone in un edificio tramite le misure del sistema SCADA di climatizzazione.** Bachelor Thesis, Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, 2017
3. R. Stante. Conteggio di persone mediante algoritmi di rilevamento di movimento su piattaforma HW Raspberry Pi. Bachelor Thesis, Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, 2017
4. R. Mazzone. **Sviluppo di un tool Matlab per l'ottimizzazione del controllo su una rete multi-hop.** Master Thesis (in Italian), Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, 2013.
5. C. Poliandri. **Rilevamento di guasti di una rete di sensori wireless per il controllo di temperature all'interno di un edificio.** Master Thesis (in Italian), Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, 2013.



6. M. Giannini. **Controllo della temperatura all'interno di un edificio attraverso una rete di sensori wireless soggetta a violazioni della sicurezza.** Bachelor Thesis (in Italian), Department of Electrical Engineering and Computer Science, University of L'Aquila, 2011.
7. L. Catenaro. **Sistemi ibridi ed applicazione ad uno scenario di Air Traffic Management.** Bachelor Thesis (in Italian), Department of Electrical and Information Engineering, University of L'Aquila, April 2007.
8. Mastroberardino. **Analisi delle interfacce tra nodi Mica2 e attuatori di controllo per mini cars.** Bachelor Thesis (in Italian), Department of Electrical and Information Engineering, University of L'Aquila, April 2007.
9. K. Palluzzi. **Analisi di un microcontrollore per mini cars.** Bachelor Thesis (in Italian), Department of Electrical and Information Engineering, University of L'Aquila, April 2007.
10. M. Di Giorgio. **Realizzazione di una Classe in C++ per la Costruzione Automatica di un Osservatore per Sistemi ad Eventi Discreti.** Bachelor Thesis (in Italian), Department of Electrical and Information Engineering, University of L'Aquila, December 2006.
11. E. Iacobucci. **Diagnosi e osservazione di automi temporizzati.** Bachelor Thesis (in Italian), Department of Electrical and Information Engineering, University of L'Aquila, July 2006.
12. G. Fiore. **Controllo di luminosità con disturbo per reti di sensori wireless.** Bachelor Thesis (in Italian), Department of Electrical and Information Engineering, University of L'Aquila, April 2006.
13. M. Pastore. **Analisi e controllo di un pendolo inverso su rete wireless.** Bachelor Thesis (in Italian), Department of Electrical and Information Engineering, University of L'Aquila, April 2006.
14. V. Ercoli. **Controllo di luminosità per reti di sensori wireless.** Bachelor Thesis (in Italian), Department of Electrical and Information Engineering, University of L'Aquila, February 2006.
15. M. Passerini. **Diagnosi di guasti in reti Wireless di sensori.** Bachelor Thesis (in Italian), Department of Electrical and Information Engineering, University of L'Aquila. December 2005.

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### *International PhD courses*

- European Embedded Control Institute (EECI) Graduate School on Control, PhD course on “Modeling, analysis and design of wireless sensor and actuator network”, A. D’Innocenzo and C. Fischione, TU-BERLIN, 22/02/2016 – 26/02/2016.

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### *Bachelor and Master courses*

**Lecturer at the Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila:**

**2019-2020:**

- **Modelling and control of communication networks**, I4T, 9 CFU. Dr. A. D’Innocenzo (6 CFU) and Dr. Francesco Smarra (3 CFU).
- **Control Systems**, I4W, 6 CFU.

**2018-2019:**

- **Modelling and control of communication networks**, I4T, 9 CFU.
- **Control Systems**, I4W, 6 CFU.
- **Fundamentals of Machine Learning over Networks and Applications to control of Cyber Physical Systems**, I4T, 3 CFU. Dr. A. D’Innocenzo (1 CFU), Prof. C. Fischione (1 CFU), Dr. Francesco Smarra (1 CFU)

**2017-2018:**

- **Modelling and control of communication networks**, I4T, 9 CFU.
- **Control Systems**, I4W, 6 CFU.

**2016-2017:**

- **Modelling and control of communication networks**, I4T, 9 CFU.
- **Control Systems**, I4W, 6 CFU.

**2015-2016:**

- **Modelling and control of communication networks**, I4T, 9 CFU.
- **Control Systems**, I4W, 6 CFU.

**2014-2015:**

- **Controlli Automatici** (Control systems), I3N, 9 CFU. Prof. Maria D. Di Benedetto (6 CFU) and Dr. Ing. A. D'Innocenzo (3 CFU).
- **Control Systems**, I4W, 6 CFU.
- **Didattica dell'automatica**, TFA A034/A035, 3CFU.

**2013-2014:**

- **Fondamenti di Automatica** (Elements of Linear Systems Theory), 6 CFU.
- **Control Systems**, 6 CFU.

**2012-2013:**

- **Didattica di Sistemi Automatici**, TFA, 3CFU.
- **Ingegneria e Tecnologia dei Sistemi di Controllo** (Engineering and Technology of Control Systems), 9 CFU.
- **Control Systems**, 6 CFU. Dr. Ing. A. D'Innocenzo (3 CFU) and Dr. Ing. G. Pola (3 CFU).

**2011-2012:**

- **Ingegneria e Tecnologia dei Sistemi di Controllo** (Engineering and Technology of Control Systems), 9 CFU. Dr. Ing. A. D'Innocenzo (6 CFU) and Prof. S. Di Gennaro (3 CFU).
- **Control Systems**, 6 CFU. Dr. Ing. A. D'Innocenzo (3 CFU) and Dr. Ing. G. Pola (3 CFU).

**2010-2011:**

- **Analisi e controllo di sistemi ibridi** (Analysis and control of hybrid systems), 9 CFU. Prof. M.D. Di Benedetto (6 CFU) and Dr. Ing. A. D'Innocenzo (3 CFU).
- **Control Systems**, 6 CFU. Prof. S. Di Gennaro (3 CFU) and Dr. Ing. A. D'Innocenzo (3 CFU).

**2009-2010:**

- **Analisi e controllo di sistemi ibridi** (Analysis and control of hybrid systems), 9 CFU. Prof. M.D. Di Benedetto (6 CFU) and Dr. Ing. A. D'Innocenzo (3 CFU).

**Teaching assistant at the Department of Electrical and Information Engineering, University of L'Aquila:**

- **Ingegneria e Tecnologia dei Sistemi di Controllo** (Engineering and Technology of Control Systems), Prof. S. Di Gennaro. Academic Years 2009-2011.
- **Control Systems**, Prof. M.D. Di Benedetto and S. Di Gennaro. Academic Year 2009-2010.

- **Analisi e controllo di sistemi ibridi** (Analysis and control of hybrid systems), Prof. M.D. Di Benedetto. Academic Years 2006-2009.
- **Controlli Automatici** (Automatic Control), Prof. M.D. Di Benedetto and S. Di Gennaro. Academic Years 2006 - 2007.

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## ***Institutional activities***

- Member of the Commission for “Incoming school orientation and placement” of the DISIM Department (2018 - now)
- Member of the Commission for “Relations with the territory” of the DISIM Department (2018 - now)
- Member of “Collegio dei Docenti”, Dottorato in INGEGNERIA E SCIENZE DELL'INFORMAZIONE - DOT13VJY7J, Università degli Studi dell'AQUILA, Cycle 35
- Member of Collegio dei Docenti, Dottorato in INGEGNERIA E SCIENZE DELL'INFORMAZIONE - DOT13VJY7J, Università degli Studi dell'AQUILA, Cycle 34
- Member of the Energy Audit Commission at the University of L'Aquila (October 2017)
- Member of the Academic Senate at the University of L'Aquila (July 2012 - June 2015)
- Member of the Commission for Research at the University of L'Aquila (July 2012 - June 2013)
- From 2010, Member of several commissions for Master/Bachelor theses dissertation, Engineering state exam, Post-doc and PhD selection procedure, TFA qualification

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## ***Publications***

### **Magazine**

1. M.D. Di Benedetto and A. D'Innocenzo. Modelling, Analysis and Co-Design of Wireless Control Networks. ERCIM News – Special theme on Cyber-Physical Systems, vol. 97, pp. 9-10, 2014

### **Journal papers**

20. Smarra F., Di Girolamo G.D., De Iuliis V., Jain A., Mangharam R., D'Innocenzo A., “Data-driven Switching Modeling for MPC using Regression Trees and Random Forests”. *Nonlinear Analysis: Hybrid Systems*, Vol. 36, 2020

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