

# **Curriculum vitæ**

**Ciro NATALE**

(March 2020)

## Curriculum vitæ

### Personal data

Name	Ciro
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Date of birth	December 12, 1969
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Home address	Via Albana, 46 – 81055 S. Maria C.V. (CE), Italy
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### Biosketch

Ciro Natale received the Laurea degree and the Research Doctorate degree in Electronic Engineering from the University of Naples in 1995 and 2000, respectively. From 2000 to 2004 he has been Research Associate at the Department of Information Engineering of the Second University of Naples (now University of Campania “Luigi Vanvitelli”), where he currently holds the position of Full Professor of Robotics and Mechatronics. From November 1998 to April 1999 he was a Visiting Scholar at the German Aerospace Center in Oberpfaffenhofen, Germany. His research interests include modeling and control of industrial manipulators, force and visual control, manipulation based on tactile sensing, cooperative robots, as well as modeling and control of flexible structures, active noise and vibration control and modeling, identification and control of smart actuators. He has published more than 130 journal and conference papers, he is author of the book: “Interaction Control of Robot Manipulators Six-degrees-of-freedom tasks” (Springer 2003) and co-author of the book: “Active Control of Flexible Structures” (Springer 2010). From 2007 to 2008 he was member of the Conference Editorial Board as Associate Editor of the International Conference on Robotics and Automation (ICRA). Since 2004 he served as Associate Editor of various international journals: International Journal of Robotics and Automation (2004-2006), IEEE Tran. on Control Systems Technology (2009-2015), IEEE Robotics and Automation Letters (2015-2018) and Automatica (2017-pres.). He is also Editor of the section “Control” of the Springer-Nature Encyclopedia of Robotics. He has been Principal Investigator of various research projects under the 7th Framework Programme and the H2020 Programme funded by the European Community.

### Current position

- ▷ **Dec. 2017–pres.** *Full Professor* at Dept. of Engineering, Università degli Studi della Campania “Luigi Vanvitelli”.

## Education

- ▷ **July 1995.** *Laurea* degree in Electronic Engineering *magna cum laude*, from Università degli Studi di Napoli Federico II, Advisor: Prof. Bruno Siciliano.
- ▷ **March 1996.** *Professional Engineer Certificate*, from Università degli Studi di Napoli Federico II.
- ▷ **Feb. 2000.** *Research Doctorate* degree in Electronic and Computer Engineering from Università degli Studi di Napoli Federico II – Dissertation: “Six-DOF interaction control of robot manipulators”, Advisor: Prof. Bruno Siciliano.

## Awards

- ▷ **Dec. 1996.** *Premio UCIMU 1996* as best Italian Laurea thesis on the topic “Robot Design and Applications”.
- ▷ **Gen. 2002.** Finalist *First Euron PhD Award* for the Best European Doctorate Thesis on Robotics.
- ▷ **Sept. 2011, 2013, 2015.** Best Interactive Presentation at the *AUTOMATICA.IT* national congress.
- ▷ **Lug. 2017.** Best Conference Paper Award at the 2017 IEEE Int. Conf. on Advanced Intelligent Mechatronics.

## Bibliometric Indices (source: Scopus 18/02/2020)

- ▷ **H index 15 years:** 18.
- ▷ **Number of citations last 15 years:** 1086.
- ▷ **Number of articles last 10 years:** 23.

## Academic services

- ▷ **2010–pres.** *Coordinator* of the Robotics Laboratory, Università degli Studi della Campania “Luigi Vanvitelli”.
- ▷ **Dec. 2003–July. 2006** *Research representative* of the Scientific Committee of Centro Interdipartimentale di Ricerca in Ingegneria Ambientale (C.I.R.I.A.M.), Seconda Università degli Studi di Napoli.
- ▷ **Oct. 2005–Oct. 2013.** *Secretary* of the Educational Council of Information Engineering of the Faculty of Engineering, Seconda Università degli Studi di Napoli.
- ▷ **Nov. 2005–pres.** *Member* of the Research Doctorate Council in Industrial and Information Engineering, Università degli Studi della Campania “Luigi Vanvitelli”.
- ▷ **Dec. 2017–pres.** *Quality Assurance Responsible* of the Bachelor Degree in Electronics and Information Engineering, Università degli Studi della Campania “Luigi Vanvitelli”.

## Editorial services

- ▷ **2019–pres.** *Section Editor* of “Encyclopedia of Robotics”, Springer-Nature.
- ▷ **2017–pres.** *Associate Editor* of “Automatica”, Elsevier.
- ▷ **2015–pres.** *Associate Editor* of “IEEE Robotics and Automation Letters”, IEEE Press.
- ▷ **2009–2015** *Associate Editor* of “IEEE Trans. on Control Systems Technology”, IEEE Press.
- ▷ **2004–2006** *Associate Editor* of “International Journal of Robotics and Automation”, ACTA Press.
- ▷ **2006** *Book reviewer* for Springer-Verlag.
- ▷ **2007–2009** *Associate Editor* of the Conference Editorial Board for the IEEE International Conference on Robotics and Automation (ICRA 2007, ICRA 2008, ICRA 2009).
- ▷ **2003** *Member* of the Editorial Board of the 10th IASTED International Conference on Robotics and Applications, Honolulu, Hawaii, August 23-25, 2004.
- ▷ **2005** *Member* of the Editorial Board of the 5th IMACS Symposium on Mathematical Modelling (MATHMOD), Vienna, Austria, February 8-10, 2006.
- ▷ **1996–pres.** *Reviewer* for: Transactions on Automatic Control, Transactions on Robotics and Automation, Transactions on Robotics, Transactions on Systems Man and Cybernetics, Transactions on Mechatronics, Transactions on Magnetics, Machine Intelligence & Robotic Control, Automatica, Robotics and Computer-Integrated Manufacturing, Robotica.

## Funded research

- ▷ **1996.** *Participant to Local Research Group* of Dipartimento di Informatica e Sistemistica, Università di Napoli Federico II, National Research Project former 40% “Control Systems for Robots Working in Structured and Unstructured Environments”, funded by *MURST*.
- ▷ **1996–1998.** *Participant to Local Research Group* of Dipartimento di Informatica e Sistemistica, Università di Napoli Federico II, for National Research Project “Modeling and Control of Spatial Flexible Manipulators”, funded by *ASI*.
- ▷ **1998–1999.** *Participant to Local Research Group* of Dipartimento di Informatica e Sistemistica, Università di Napoli Federico II for the National Research Project “RAM-SETE: Articulated and Mobile Robotics for SErvices and TEchnologies”, funded by *MURST*.

- ▷ **2000–2002.** *Participant to Local Research Group* of Dipartimento di Ingegneria dell'Informazione, Seconda Università degli Studi di Napoli for the National Research Project “Innovative Control for high speed transportation systems”, funded by *MUR-ST*.
- ▷ **2000–2003.** *Participant to Local Research Group* of Dipartimento di Ingegneria dell'Informazione, Seconda Università degli Studi di Napoli, Workpackage Leader for the FP5 European Project “Magnetostrictive Equipment and Systems for more electric Aircraft (MESA)” funded by *European Community*.
- ▷ **2004–2006.** *Team Leader* of Dipartimento di Ingegneria dell'Informazione, Seconda Università degli Studi di Napoli, Workpackage Leader for the FP6 European project “Magnetoelastic Energy Systems for Even More electric Aircraft (MESEMA)” funded by *European Community*.
- ▷ **2005–2006.** *Participant to Local Research Group* of Dipartimento di Ingegneria dell'Informazione, Seconda Università degli Studi di Napoli for the National Research Project “Magnetoelastic Materials and Optoelectronic Sensors: Integration of Technologies for Realization of Smart Actuators and Sensors” funded by *MIUR*.
- ▷ **2006–2009.** *Participant to Local Research Group* of Dipartimento di Ingegneria dell'Informazione, Seconda Università degli Studi di Napoli for the FP6 European Project “More Open Electrical Technologies (MOET)”, funded by *European Community*.
- ▷ **2008–2013** *Participant to Local Research Group* of Dipartimento di Ingegneria dell'Informazione, Seconda Università degli Studi di Napoli for the FP7 European Project “DEXterous and autonomous dual-arm/hand robotic manipulation with sMART sensory-motor skills: A bridge from natural to artificial cognition (DEXMART)” funded by *European Community*.
- ▷ **2009–2014** *Team Leader* of Dipartimento di Ingegneria dell'Informazione, Seconda Università degli Studi di Napoli for the FP7 European Project “European Clearing House for Open Robotics Development (ECHORD)” funded by *European Community*.
- ▷ **2011–2015** *Team Leader* of Dipartimento di Ingegneria Industriale e dell'Informazione, Seconda Università degli Studi di Napoli for the FP7 European Project “Safe and Autonomous Physical Human-Aware Robot Interaction (SAPHARI)” funded by *European Community*.
- ▷ **2012–2016** *Team Leader* of Dipartimento di Ingegneria Industriale e dell'Informazione, Seconda Università degli Studi di Napoli for the FP7 European Project “Low COst Manufacturing and Assembly of Composite and Hybrid Structures (LOCOMACHS)” funded by *European Community*.
- ▷ **2013–pres.** *Team Leader* of Dipartimento di Ingegneria Industriale e dell'Informazione, Università degli Studi della Campania “Luigi Vanvitelli” for the FP7 European Project “European Robotics Challenges (EUROC)” funded by *European Community*.
- ▷ **2014–2017** *Team Leader* of Dipartimento di Ingegneria Industriale e dell'Informazione, Università degli Studi della Campania “Luigi Vanvitelli” for the National Project

(PON) “Sviluppo di materiali e Tecnologie Ecocompatibili, di Processi di Foratura, taglio e di Assemblaggio Robotizzato (STEPFAR)” funded by *MIUR*.

- ▷ **2016–pres.** *Participant to Local Research Group* of Dipartimento di Ingegneria Industriale dell’Informazione, Università degli Studi della Campania “Luigi Vanvitelli” for the FP7 European Project “Wiring Robotic System for Switchgears (WIRES)” funded by *European Community*.
- ▷ **2019–pres.** *Team Leader* of Dipartimento di Ingegneria dell’Informazione, Università degli Studi della Campania “Luigi Vanvitelli” for the H2020 European Project “Robotics Enabling Fully-Integrated Logistics Lines for Supermarkets (REFILLS)” funded by *European Community*.
- ▷ **2018–pres.** *Team Leader* of Dipartimento di Ingegneria, Università degli Studi della Campania “Luigi Vanvitelli” for the H2020 European Project “Lean robotized Assembly and cOntrol of composite aeRostructures (LABOR)” funded by *European Community*.
- ▷ **2019–pres.** *Participant to Local Research Group* of Dipartimento di Ingegneria, Università degli Studi della Campania “Luigi Vanvitelli” for the H2020 European Project “Robotic technologies for the manipulation of complex deformable linear objects (REMODEL)” funded by *European Community*.

## Educational activities

- ▷ **2001–2007** *Professor* of “System Theory” (undergraduate level).
- ▷ **2001–2007** *Professor* of “Process Control Theory” (graduate level).
- ▷ **2006–2010** *Professor* of “Industrial Robotics” (graduate level).
- ▷ **2007–2009** *Professor* of “Laboratory 2” (undergraduate level).
- ▷ **2008–2011** *Professor* of “Automatic Control Theory” (undergraduate level).
- ▷ **2011–2012** *Professor* of “Foundations of Automatic Control” (undergraduate level).
- ▷ **2010–pres.** *Professor* of “Robotics” (graduate level).
- ▷ **2010–pres.** *Professor* of “Mechatronics and Automation” (graduate level).

## Program Committee Memberships

- ▷ 10th IASTED International Conference on Robotics and Applications, Honolulu, Hawaii, August 23-25, 2004.
- ▷ 5th IMACS Symposium on Mathematical Modelling (MATHMOD), Vienna, Austria, February 8-10, 2006.
- ▷ Automatica 2018, Firenze, Italy, Settembre 12-14, 2018.

## Publications

### Books

- [B1] A. Cavallo, G. De Maria, C. Natale e S. Pirozzi. *Active Control of Flexible Structures. From modelling to implementation*. London, UK: Springer-Verlag, 2010.
- [B2] C. Natale. *Dispense per il Corso di Analisi dei Sistemi*. 2nd. Aversa, I: Artegrafica Molinaro, 2003.
- [B3] C. Natale. *Interaction control of robot manipulators. Six-degrees-of-freedom tasks*. Heidelberg, D: Springer-Verlag, 2003.

### Articles

- [A1] A. Cavallo, M. Costanzo, G. De Maria e C. Natale. “Modeling and slipping control of a planar slider”. In: *Automatica* 115 (2020), p. 108875.
- [A2] M. Costanzo, G. De Maria e C. Natale. “Two-Fingered In-Hand Object Handling Based on Force/Tactile Feedback”. In: *IEEE Transactions on Robotics* 36.1 (2020), pp. 157–173.
- [A3] M. Costanzo, S. Stelter, C. Natale, S. Pirozzi, G. Bartels, A. Maldonado e M. Beetz. “Manipulation Planning and Control for Shelf Replenishment”. In: *IEEE Robotics and Automation Letters* 5.2 (2020), pp. 1595–1601.
- [A4] M. Costanzo, G. De Maria, C. Natale e S. Pirozzi. “Design and Calibration of a Force/Tactile Sensor for Dexterous Manipulation”. In: *Sensors* 19.4 (2019).
- [A5] M. Costanzo, G. De Maria, G. Lettera, C. Natale e S. Pirozzi. “Motion Planning and Reactive Control Algorithms for Object Manipulation in Uncertain Conditions”. In: *Robotics* 7.4 (2018).
- [A6] S. Pirozzi e C. Natale. “Tactile-based manipulation of wires for switchgear assembly”. In: *IEEE/ASME Transactions on Mechatronics* 23.6 (2018), pp. 2650–2661.
- [A7] C. M. Verrelli, S. Pirozzi, P. Tomei, C. Natale, S. Bifaretti, A. Lidozzi, M. Tiberti e D. Diaferia. “Synchronisation control of electric motors through adaptive disturbance cancellation”. In: *International Journal of Control* 91.10 (2018), pp. 2147–2158.
- [A8] A. Cirillo, P. Cirillo, G. D. Maria, A. Marino, C. Natale e S. Pirozzi. “Optimal custom design of both symmetric and unsymmetrical hexapod robots for aeronautics applications”. In: *Robotics and Computer-Integrated Manufacturing* 44 (2017), pp. 1–16.
- [A9] A. Cirillo, P. Cirillo, G. D. Maria, C. Natale e S. Pirozzi. “A Distributed Tactile Sensor for Intuitive Human-Robot Interfacing”. In: *Journal of Sensors* 2017 (2017), p. 14.

- [A10] A. Cirillo, P. Cirillo, G. D. Maria, C. Natale e S. Pirozzi. “Improved Version of the Tactile/Force Sensor Based on Optoelectronic Technology”. In: *Procedia Engineering* 168 (2016). Proceedings of the 30th anniversary Eurosensors Conference Eurosensors 2016, 4-7. September 2016, Budapest, Hungary, pp. 826–829.
- [A11] A. Cirillo, F. Ficuciello, C. Natale, S. Pirozzi e L. Villani. “A Conformable Force/Tactile Skin for Physical HumanRobot Interaction”. In: *IEEE Robotics and Automation Letters* 1.1 (2016), pp. 41–48.
- [A12] G. Palli, S. Pirozzi, C. Natale, G. De Maria e C. Melchiorri. “Experiments of fine manipulation tasks with dexterous robotic hands”. In: *Meccanica* 50.11 (2015), pp. 2767–2780.
- [A13] C. M. Verrelli, S. Pirozzi, P. Tomei e C. Natale. “Linear Repetitive Learning Controls for Robotic Manipulators by Pad Approximants”. In: *IEEE Transactions on Control Systems Technology* 23.5 (2015), pp. 2063–2070.
- [A14] M. Bjerkgeng, P. Falco, C. Natale e K. Y. Pettersen. “Stability Analysis of a Hierarchical Architecture for Discrete-Time Sensor-Based Control of Robotic Systems”. In: *IEEE Transactions on Robotics* 30.3 (2014), pp. 745–753.
- [A15] A. Cavallo, G. De Maria, C. Natale e S. Pirozzi. “Slipping detection and avoidance based on Kalman filter”. In: *Mechatronics* 24 (2014), pp. 489–2499.
- [A16] A. Cirillo, P. Cirillo, G. D. Maria, C. Natale e S. Pirozzi. “An artificial skin based on optoelectronic technology”. In: *Sensors and Actuators A: Physical* 212 (2014), pp. 110–122.
- [A17] P. Falco e C. Natale. “Low-level flexible planning for mobile manipulators: a distributed perception approach”. In: *Advanced Robotics* 28 (2014), pp. 1431–1444.
- [A18] G. Palli, C. Melchiorri, G. Vassura, U. Scarcia, L. Moriello, G. Berselli, A. Cavallo, G. D. Maria, C. Natale, S. Pirozzi, C. May, F. Ficuciello e B. Siciliano. “The DEXMART hand: Mechatronic design and experimental evaluation of synergy-based control for human-like grasping”. In: *The International Journal of Robotics Research* 33.5 (2014), pp. 799–824.
- [A19] P. Falco, C. Natale e R. Dillmann. “Ensuring kinetostatic consistency in observation of human manipulation”. In: *Robotics and Autonomous Systems* 61.5 (2013), pp. 545–553.
- [A20] G. D. Maria, C. Natale e S. Pirozzi. “Tactile data modeling and interpretation for stable grasping and manipulation”. In: *Robotics and Autonomous Systems* 61.9 (2013), pp. 1008–1020.
- [A21] G. Palli, C. Natale, C. May, C. Melchiorri e T. Wurtz. “Modeling and Control of the Twisted String Actuation System”. In: *IEEE/ASME Transactions on Mechatronics* 18.2 (2013), pp. 664–673.
- [A22] A. Cavallo, G. D. Maria, C. Natale e S. Pirozzi. “Classes of Strongly Stabilizing Bandpass Controllers for Flexible Structures”. In: *Advances in Acoustics and Vibration* 2012 (2012), p. 11.
- [A23] G. De Maria, C. Natale e S. Pirozzi. “Force/tactile sensor for robotic applications”. In: *Sensors and Actuators A: Physical* 175 (2012), pp. 60–72.



- [A24] P. Falco, G. D. Maria, C. Natale e S. Pirozzi. “Data Fusion Based on Optical Technology for Observation of Human Manipulation”. In: *International Journal of Optomechatronics* 6.1 (2012), pp. 37–70.
- [A25] A. D’Amore, G. De Maria, L. Grassia, C. Natale e S. Pirozzi. “Silicone rubber based tactile sensor for measurement of normal and tangential components of the contact force”. In: *Journal of Applied Polymer Science* 122 (2011), pp. 3758–3770.
- [A26] P. Falco e C. Natale. “On the Stability of Closed-Loop Inverse Kinematics Algorithms for Redundant Robots”. In: *IEEE Transactions on Robotics* 27.4 (2011), pp. 780–784.
- [A27] A. Cavallo, G. D. Maria, C. Natale e S. Pirozzi. “Optoelectronic joint angular sensor for robotic fingers”. In: *Sensors and Actuators A: Physical* 152.2 (2009), pp. 203–210.
- [A28] A. Cavallo, C. May, A. Minardo, C. Natale, P. Pagliarulo e S. Pirozzi. “Active vibration control by a smart auxiliary mass damper equipped with a fiber Bragg grating sensor”. In: *Sensors and Actuators A: Physical* 153.2 (2009), pp. 180–186.
- [A29] A. Cavallo, D. Davino, G. D. Maria, C. Natale, S. Pirozzi e C. Visone. “Hysteresis compensation of smart actuators under variable stress conditions”. In: *Physica B: Condensed Matter* 403.2 (2008), pp. 261–265.
- [A30] A. Cavallo, G. D. Maria, C. Natale e S. Pirozzi. “Robust control of flexible structures with stable bandpass controllers”. In: *Automatica* 44.5 (2008), pp. 1251–1260.
- [A31] A. Cavallo, G. De Maria, C. Natale e S. Pirozzi. “Gray-Box Identification of Continuous-Time Models of Flexible Structures”. In: *IEEE Transactions on Control Systems Technology* 15.5 (2007), pp. 967–981.
- [A32] F. Caccavale, C. Natale, B. Siciliano e L. Villani. “Integration for the next generation: embedding force control into industrial robots”. In: *IEEE Robotics Automation Magazine* 12.3 (2005), pp. 53–64.
- [A33] A. Cavallo, C. Natale, S. Pirozzi e C. Visone. “Limit cycles in control systems employing smart actuators with hysteresis”. In: *IEEE/ASME Transactions on Mechatronics* 10.2 (2005), pp. 172–180.
- [A34] D. Davino, C. Natale, S. Pirozzi e C. Visone. “A fast compensation algorithm for real-time control of magnetostrictive actuators”. In: *Journal of Magnetism and Magnetic Materials* 290-291 (2005). Proceedings of the Joint European Magnetic Symposia (JEMS’ 04), pp. 1351–1354.
- [A35] A. Cavallo e C. Natale. “High-order sliding control of mechanical systems: theory and experiments”. In: *Control Engineering Practice* 12.9 (2004), pp. 1139–1149.
- [A36] A. Cavallo, C. Natale, S. Pirozzi, C. Visone e A. Formisano. “Feedback control systems for micropositioning tasks with hysteresis compensation”. In: *IEEE Transactions on Magnetics* 40.2 (2004), pp. 876–879.
- [A37] D. Davino, C. Natale, S. Pirozzi e C. Visone. “Phenomenological dynamic model of a magnetostrictive actuator”. In: *Physica B: Condensed Matter* 343.1 (2004). Proceedings of the Fourth Intional Conference on Hysteresis and Micromagnetic Modeling, pp. 112–116.

- [A38] D. Davino, C. Natale, S. Pirozzi e C. Visone. “Rate-dependent losses modeling for magnetostrictive actuators”. In: *Journal of Magnetism and Magnetic Materials* 272-276 (2004), E1781–E1782.
- [A39] G. Aurilio, A. Cavallo, L. Lecce, E. Monaco, L. Napolitano e C. Natale. “Fuselage frame vibration control using magnetostrictive hybrid dynamic vibration absorbers”. In: *Acta Acustica (Stuttgart)* 89.SUPP. (2003), S52–S53.
- [A40] F. Caccavale, C. Natale e L. Villani. “Output feedback control of mechanical systems with application to spacecraft and robots”. In: *Journal of Guidance, Control, and Dynamics* 26.2 (2003), pp. 273–282.
- [A41] A. Cavallo e C. Natale. “Output feedback control based on a high-order sliding manifold approach”. In: *IEEE Transactions on Automatic Control* 48.3 (2003), pp. 469–472.
- [A42] A. Cavallo, C. Natale, S. Pirozzi e C. Visone. “Effects of hysteresis compensation in feedback control systems”. In: *IEEE Transactions on Magnetics* 39.3 (2003), pp. 1389–1392.
- [A43] F. Caccavale, C. Natale, B. Siciliano e L. Villani. “Achieving a cooperative behavior in a dual-arm robot system via a modular control structure”. In: *Journal of Robotic Systems* 18.12 (2001), pp. 691–699.
- [A44] C. Natale, F. Velardi e C. Visone. “Identification and compensation of Preisach hysteresis models for magnetostrictive actuators”. In: *Physica B: Condensed Matter* 306.1 (2001), pp. 161–165.
- [A45] C. Natale, R. Koeppel e G. Hirzinger. “A systematic design procedure of force controllers for industrial robots”. In: *IEEE/ASME Transactions on Mechatronics* 5.2 (2000), pp. 122–131.
- [A46] L. Villani, C. Natale, B. Siciliano e C. C. de Wit. “An experimental study of adaptive force/position control algorithms for an industrial robot”. In: *IEEE Transactions on Control Systems Technology* 8.5 (2000), pp. 777–786.
- [A47] F. Caccavale, C. Natale, B. Siciliano e L. Villani. “Six-DOF impedance control based on angle/axis representations”. In: *IEEE Transactions on Robotics and Automation* 15.2 (1999), pp. 289–300.
- [A48] F. Caccavale, C. Natale, B. Siciliano e L. Villani. “Resolved-acceleration control of robot manipulators: A critical review with experiments”. In: *Robotica* 16.5 (1998), pp. 565–573.

## Edited books

- [EB1] “Gearing up and accelerating cross-fertilization between academic and industrial robotics research in Europe. Technology transfer experiments from the ECHORD project”. In: a cura di F. Rhrbein, G. Veiga e C. Natale. Vol. 94. Springer Tracts in Advanced Robotics. Cham: Springer, 2013.

## Book chapters

- [BC1] C. Natale. “Admittance Control”. In: *Encyclopedia of Robotics*. A cura di M. H. Ang, O. Khatib e B. Siciliano. Berlin, Heidelberg: Springer Berlin Heidelberg, 2020, pp. 1–5.
- [BC2] C. Natale. “Compliance Control”. In: *Encyclopedia of Robotics*. A cura di M. H. Ang, O. Khatib e B. Siciliano. Berlin, Heidelberg: Springer Berlin Heidelberg, 2020, pp. 1–8.
- [BC3] C. Natale. “Impedance Control”. In: *Encyclopedia of Robotics*. A cura di M. H. Ang, O. Khatib e B. Siciliano. Berlin, Heidelberg: Springer Berlin Heidelberg, 2020, pp. 1–7.
- [BC4] C. Natale. “Physical human-robot interaction”. In: *Encyclopedia of Systems and Control*. A cura di J. Baillieul e T. Samad. Springer Nature, 2020, pp. 1–9.
- [BC5] C. Natale. “Stiffness Control”. In: *Encyclopedia of Robotics*. A cura di M. H. Ang, O. Khatib e B. Siciliano. Berlin, Heidelberg: Springer Berlin Heidelberg, 2020, pp. 1–4.
- [BC6] A. Cirillo, P. Cirillo, G. De Maria, C. Natale e S. Pirozzi. “Force/tactile sensors based on optoelectronic technology for manipulation and physical human-robot interaction”. In: *Advanced Mechatronics and MEMS Devices - II*. A cura di B. Wei e D. Zhang. Springer, 2017, pp. 95–131.
- [BC7] A. Cirillo, P. Cirillo, G. De Maria, C. Natale e S. Pirozzi. “A comparison of multi-sensor attitude estimation algorithms”. In: *Multisensor Attitude Estimation: Fundamental Concepts and Applications*. A cura di H. Fourati e D. Belkhiat. Boca Raton, FL: CRC press, 2016, pp. 529–540.
- [BC8] S. Griffiths, C. Natale, R. Araújo, G. Veiga, P. Chiacchio, F. Röhrbein, S. Chiaverini e R. Lafrenz. “The ECHORD Project: A General Perspective”. In: *Gearing up and accelerating cross-fertilization between academic and industrial robotics research in Europe*. A cura di F. Röhrbein, G. Veiga e C. Natale. Cham: Springer International Publishing, 2014, pp. 1–24.
- [BC9] A. Cavallo, A. Cirillo, P. Cirillo, G. De Maria, P. Falco, C. Natale e S. Pirozzi. “Research activities at Seconda Università degli Studi di Napoli”. In: *ROCOCO - Cooperative and Collaborative Robotics*. A cura di F. Basile e P. Chiacchio. Vol. 94. Fisciano, I: CUES, 2013, pp. 63–104.
- [BC10] C. Borst, F. Zacharias, F. Schmidt, D. Leidner, M. A. Roa, K. Hertkorn, G. Grunwald, P. Falco, C. Natale e E. Maggio. “Observation and Execution”. In: *Advanced Bimanual Manipulation: Results from the DEXMART Project*. A cura di B. Siciliano. Berlin, Heidelberg: Springer Berlin Heidelberg, 2012, pp. 59–122.
- [BC11] G. Palli, C. Melchiorri, G. Vassura, G. Berselli, S. Pirozzi, C. Natale, G. De Maria e C. May. “Innovative Technologies for the Next Generation of Robotic Hands”. In: *Advanced Bimanual Manipulation: Results from the DEXMART Project*. A cura di B. Siciliano. Berlin, Heidelberg: Springer Berlin Heidelberg, 2012, pp. 173–218.
- [BC12] A. Cavallo, G. D. Maria, C. Natale e S. Pirozzi. “Minimally Invasive Force Sensing for Tendon-driven Robots”. In: *Cutting Edge Robotics 2010*. A cura di V. Kordic. Rijeka: IntechOpen, 2010. Cap. 24, pp. 379–394.

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