

# BRUNO SICILIANO'S CV (SUMMER 2018)

PRISMA Lab

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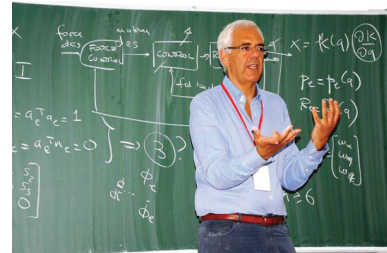
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## Biosketch

BRUNO SICILIANO is Professor of Control and Robotics, Director of the Interdepartmental Center for Advanced Robotics in Surgery (ICAROS) and Coordinator of the PRISMA Lab in the Department of Electrical Engineering and Information Technology at University of Naples Federico II. His research interests in robotics include manipulation and control, human–robot cooperation, and service robotics. He has co-authored 14 books, 100 journal papers and 270 conference papers/book chapters; his book *Robotics: Modelling, Planning and Control* is one of the most widely adopted textbooks world-wide and has been translated into Chinese, Greek and Italian. He has delivered more than 150 invited lectures and seminars at institutions worldwide, and he has been the recipient of several awards. He is a **Fellow** of **IEEE**, **ASME** and **IFAC**. He is Co-Editor of the Springer Tracts in Advanced Robotics series, the Springer Proceedings in Advanced Robotics series, and has served on the Editorial Boards of several journals as well as Chair or Co-Chair for numerous international conferences. He co-edited the *Springer Handbook of Robotics*, which received the **AAP PROSE Award for Excellence in Physical Sciences & Mathematics** and was also the winner in the category **Engineering & Technology**. His group has been granted twenty European projects, including an **Advanced Grant** from the **European Research Council**. He has served the **IEEE Robotics and Automation Society** as **President**, as Vice-President for Technical Activities and Vice-President for Publications, as a member of the AdCom, and as a Distinguished Lecturer. Professor Siciliano is currently a Board Director of the European Robotics Association.

## Academic Positions

- **Full professor** (2003–pres.), University of Naples Federico II, Department of Computer and Systems Engineering
- **Full professor** (2000–2003), University of Salerno, Department of Information and Electrical Engineering
- **Associate professor** (1992–2000), University of Naples Federico II, Department of Computer and Systems Engineering
- **Assistant professor** (1989–1992), University of Naples, Department of Computer and Systems Engineering
- **Research scientist** (1986–1989), University of Naples, Department of Computer and Systems Engineering
- **Ph.D. student** (1983–1986), University of Naples, Department of Computer and Systems Engineering

## International Recognition and Awards

- **Honorary Professor of Óbuda University** for his outstanding achievements in improving and increasing the international quality of education, scientific research and academic activities of Óbuda University, Budapest, Hungary, 2016

- **PROSE Awards for Excellence in Physical Sciences & Mathematics, and for Engineering & Technology**, Springer Handbook of Robotics, American Association of Publishers, Washington, DC, USA, 2009
- **IEEE RAS George Saridis Leadership Award in Robotics and Automation** for his outstanding leadership in the robotics and automation community as a research innovator, an inspired educator, a dedicated contributor of professional service, an ambassador of science and technology, Seattle, WA, USA, 2015
- **IEEE RAS Distinguished Service Award** for outstanding leadership and commitment in promoting robotics and automation and RAS as the number one Society in the field, Anchorage, AK, USA, 2010
- **President of the IEEE Robotics and Automation Society**, 2008–2009; Junior Past-President, 2010–2011; Senior Past-President, 2012–2013
- **Distinguished Lecturer of the IEEE Robotics and Automation Society**, 2004–2007
- **Vice-President for Technical Activities of the IEEE Robotics and Automation Society**, 2000–2003
- **Vice-President for Publications of the IEEE Robotics and Automation Society**, 1999
- **Administrative Committee Member of the IEEE Robotics and Automation Society**, 1996–1999, 2005
- **IFAC Fellow** for outstanding contributions to research and education on theory and application of automatic control to robotic systems, and for professional leadership in the field, 2009
- **ASME Fellow**, 2002
- **IEEE Fellow** for contributions to dynamic modeling and control of robotic systems and for leadership in robotics education, 2000
- **ERC Advanced Grant** recipient for project on “Robotic Dynamic Manipulation”, 2012
- **H-index of 52** through over 350 scientific publications (including 3 best paper awards) and nearly 20,000 citations
- **Co-author** of the textbook *Robotics: Modelling, Planning and Control*, 2009; 2nd edition, 2000; 1st edition, 1995; translated in Chinese, Greek and Italian; more than 100 adoptions worldwide
- **Co-author** of the textbook *Theory of Robot Control*, 1996
- **Co-editor** of the *Springer Handbook of Robotics*, 2016; 1st edition, 2008
- **Co-editor** of the *Springer Proceedings in Advanced Robotics* series, 2016–pres.
- **Co-editor** of the *Springer Tracts in Advanced Robotics* series, 2003–pres.
- **Associate Editor** of *Intelligent Service Robotics* (2006–pres.), *Journal of Robotic Systems* (2001–2005), *Japanese Society of Mechanical Engineers International Journal* (1998–2001), *Robotica* (1994–pres.), *ASME Journal of Dynamic Systems, Measurement, and Control* (1994–1999), *IEEE Transactions on Robotics and Automation* (1991–1994)
- **Guest Editor** for the *International Journal of Robotics Research* (2004), *IEEE/ASME Transactions on Mechatronics* (2002, 2000), *Journal of Robotic Systems* (2001), *Advanced Robotics* (1996)
- **General or Program (Co-)Chair** for more than 30 international conferences, including the *IEEE Int. Conf. on Robotics and Automation*, *Int. Conf. on Advanced Intelligent Mechatronics*, *IEEE/RSJ Int. Conf. on Intelligent Robots and System*, *Int. Symp. on Experimental Robotics*, *IFAC Symp. on Robot Control*, *IEEE Int. Work. on Control Problems in Robotics and Automation: Future Directions*, and *IEEE Int. Work. on Safety, Security, and Rescue Robots*
- **Committee member** for more than 300 international conferences
- **Keynote/plenary speaker** at more than 25 international conferences

- **Invited talks** at more than 130 institutions world-wide
- **Invited speaker**, “Robotics & Napoli: The Art of Work & Play”, *TEDx Napoli*, Italy, 2016
- **Reviewer** for the major scientific journals and conferences in the area of robotics and control, as well as for evaluation of institutions and project proposals at both European and international level
- **Letters of Reference** for career promotion or award attribution for more than 150 scholars around the world
- **Ph.D. Committee member** at numerous prestigious institutions including: Australian National University, Danmarks Tekniske Universitet, École Nationale Supérieure d’Arts et Métiers, École Nationale Supérieure des Mines de Paris, Isfahan University of Technology, Katholieke Universiteit Leuven, Linköpings universitet, Lunds Tekniska Högskola, Örebro universitet, Politecnico di Milano, Royal Military Academy Brussels, Scuola Superiore Sant’Anna Pisa, Tallinn University of Technology, Technische Universität München, Universidade de Coimbra, Università di Cassino, Università di Padova, Università di Parma, Università di Roma "Tor Vergata", Universitat Politècnica de Catalunya, Université Blaise Pascal Clermont Ferrand, Université de Rennes 1, Université Montpellier II, Université Paul Sabatier Toulouse, Université Pierre et Marie Curie Paris, Universiteit Twente, Universitetet i Trondheim, University of Canterbury, University of the West of England
- **International research cooperation** with more than 50 leading research institutions and more than 20 companies in the field
- **Substantial funding** of 10 Million Euro for his group’s research through the ERC-funded Advanced Grant project RoDyMan (Robotic Dynamic Manipulation, 2013–2019, principal investigator), the EC-funded projects HYFLIERS (HYbrid FLYing-rollIng with-snake-aRm robot for contact inSpection, 2018–2021), REFILLS (Robotics Enabling Fully-Integrated Logistics Lines for Supermarkets, 2017–2020, coordinator), RockEU2 (Robotics Coordination Action for Europe Two, 2016–2018), AEROARMS (Aerial Robotic system integrating multiple ARMS and advanced manipulation capabilities for inspection and maintenance, 2015–2019), EuRoC (European Robotic Challenges, 2014–2018, coordinator), SHERPA (Smart collaboration between Humans and ground-aerial Robots for imProving rescuing activities in Alpine environments, 2013–2017), RockEU (Robotics Coordination Action for Europe, 2013–2016), ARCAS (Aerial Robotics Cooperative Assembly System, 2011–2015), SAPHARI (Safe and Autonomous Physical Human-Aware Robot Interaction, 2011–2015), AIRobots (Innovative Aerial Service Robots for Remote Inspections by Contact, 2010–2013), euRobotics (European Robotics Coordination Action, 2010–2013), ECHORD (European Clearing House for Open Robotics Development, 2009–2013, co-coordinator), DEXMART (DEXterous and Autonomous Dual-Arm/Hand Robotic Manipulation with sMART Sensory-Motor Skills: A Bridge from Natural to Artificial Cognition, 2008–2012, coordinator), PHRIENDS (Physical Human-Robot Interaction: DepENDability and Safety, 2006–2009), ETHICBOTS (Emerging Technoethics of Human Interaction with Communication, Bionic, and Robotic Systems, 2005–2007), EURON 2 (European Robotics Research Network, 2004–2008), PHRIDOM (Physical Human-Robot Interaction in anthropic DOMains: safety and dependability, 2005–2006), EURON (European Robotics Research Network, 2000–2004), ERNET (European Robotics Network, 1993–1996). National projects funded by Ministry of University Scientific Research and Technology and additional projects funded by National Research Council, Italian Space Agency and other agencies
- **Promoter and Board Member of Network of Excellence EURON (European Robotics Research Network)**, 2000–2008. This network, gathering more than 200 research groups, has been supported by EC across FP5 and FP6 and has identified the European academic robotics in the rest of the world
- **Elected to Board of Directors of the euRobotics AISBL** (twice since 2013), the entity promoting the creation of a Public Private Partnership in Robotics in Europe
- **Initiator and Coordinator of the 1st Strategic Robotics Challenge program in Europe (EuRoC)** which granted a cumulative sum of 7 M Euro to 15 selected challenger teams through three stages of increasing complexity

## Publications

### International Books [14]

#### Monographs

- [Bm-6] B. SICILIANO, L. Sciavicco, L. Villani, G. Oriolo, *Robotics — Modelling, Planning and Control*, Springer Advanced Textbooks in Control and Signal Processing Series, London, UK, 2009  
 Italian edition: *Robotica — Modellistica, Pianificazione e Controllo*, McGraw-Hill Libri Italia, Milano, 2008  
 Greek edition: *Ρομποτική*, Fountas, Athens, 2014  
 Chinese edition, Xi'an Jiaotong University Press, Xi'an, China, 2016
- [Bm-5] L. Villani, G. Oriolo, B. SICILIANO, *Solution Manual to Accompany Robotics — Modelling, Planning and Control*, Springer, London, UK, 2009  
 available on the site  
<http://www.springer.com/engineering/robotics/book/978-1-84628-641-4>
- [Bm-4] B. SICILIANO, L. Villani, *Robot Force Control*, Kluwer Academic Publishers International Series in Engineering and Computer Science 540, Boston, MA, 1999
- [Bm-3] L. Sciavicco, B. SICILIANO, *Modelling and Control of Robot Manipulators*, McGraw-Hill Electrical and Computer Engineering Series, New York, NY, 1996  
 International Student Edition, Singapore, 1996  
 2nd edition: Springer-Verlag Advanced Textbooks in Control and Signal Processing Series, London, UK, 2000  
 Italian edition: *Robotica Industriale — Modellistica e Controllo di Robot Manipolatori*, McGraw-Hill Libri Italia, Milano, 1995  
 2nd Italian edition: McGraw-Hill Libri Italia, Milano, 2000
- [Bm-2] B. SICILIANO, L. Villani, *Solutions Manual to Accompany Modelling and Control of Robot Manipulators*, McGraw-Hill, New York, NY, 1996  
 2nd edition: Springer-Verlag, London, UK, 2000  
 MATLAB/SIMULINK Toolbox available on the site  
<http://www.mathworks.com/support/books/book1655.jsp>
- [Bm-1] C. Canudas de Wit, B. SICILIANO, G. Bastin (Eds.), *Theory of Robot Control*, Springer-Verlag Communications and Control Engineering Series, London, UK, 1996

#### Edited Volumes

- [Be-8] B. SICILIANO, O. Khatib, *Springer Handbook of Robotics, 2nd Edition*, Springer Handbook Series, Heidelberg, Germany, 2016
- [Be-7] B. SICILIANO (Ed.), *Advanced Bimanual Manipulation: Results from the DEXMART Project*, Springer Tracts in Advanced Robotics 80, Heidelberg, Germany, 2012
- [Be-6] B. SICILIANO, O. Khatib, *Springer Handbook of Robotics*, Springer Handbook Series, Heidelberg, Germany, 2008
- [Be-5] B. SICILIANO, A. De Luca, C. Melchiorri, G. Casalino (Eds.), *Advances in Control of Articulated and Mobile Robots*, Springer Tracts in Advanced Robotics 10, Heidelberg, Germany, 2004
- [Be-4] B. SICILIANO, P. Dario (Eds.), *Experimental Robotics VIII*, Springer Tracts in Advanced Robotics 5, Heidelberg, Germany, 2003
- [Be-3] B. SICILIANO (Ed.), *2001 IEEE/ASME International Conference on Advanced Intelligent Mechatronics Proceedings*, Omnipress, Madison, WI, 2001

- [Be-2] S. Nicosia, B. SICILIANO, A. Bicchi, P. Valigi (Eds.), *RAMSETE — Articulated and Mobile Robotics for Services and Technologies*, Springer-Verlag Lecture Notes on Control and Information Sciences 270, Heidelberg, Germany, 2001
- [Be-1] B. SICILIANO, K.P. Valavanis (Eds.), *Control Problems in Robotics and Automation*, Springer-Verlag Lecture Notes on Control and Information Sciences 230, London, UK, 1998

## International Journal Papers [99]

### Refereed

- [Jr-78] M. Selvaggio, G.A. Fontanelli, F. Ficuciello, L. Villani, B. SICILIANO, “Passive virtual fixtures adaptation in minimally invasive robotic surgery”, *IEEE Robotics and Automation Letters*, **3**, IEEE Press, Piscataway NJ, USA, 2018
- [Jr-77] A. Mashayekhi, S. Behbahani, F. Ficuciello, B. SICILIANO, “Analytical stability criterion in haptic rendering: The role of damping”, *IEEE/ASME Transactions on Mechatronics*, **23**(2), IEEE Press, Piscataway NJ, USA, 2018
- [Jr-76] G.A. Fontanelli, M. Selvaggio, L.R. Buonocore, F. Ficuciello, L. Villani, B. SICILIANO, “A new laparoscopic tool with in-hand rolling capabilities for needle reorientation”, *IEEE Robotics and Automation Letters*, **3**, IEEE Press, Piscataway NJ, USA, 2018
- [Jr-75] F. Ruggiero, V. Lippiello, B. SICILIANO, “Nonprehensile dynamic manipulation: A survey”, *IEEE Robotics and Automation Letters*, **3**, IEEE Press, Piscataway NJ, USA, 2018
- [Jr-74] A. Gutiérrez-Giles, F. Ruggiero, V. Lippiello, B. SICILIANO, “Nonprehensile manipulation of an underactuated mechanical system with second order nonholonomic constraints: the robotic hula-hoop”, *IEEE Robotics and Automation Letters*, **3**, IEEE Press, Piscataway NJ, USA, 2018
- [Jr-73] A. Donaire, F. Ruggiero, L.R. Buonocore, V. Lippiello, B. Siciliano, “Passivity-based control for a rolling-balancing system: The nonprehensile disk-on-disk”, *IEEE Transactions on Control System Technology*, **25**, 2135–2142, IEEE Press, Piscataway NJ, USA, 2017
- [Jr-72] R. Russo, D. D’Auria, M. Ciccarelli, G. Della Rotonda, G. D’Elia, B. SICILIANO, “Triangular block bridge method for surgical treatment of complex proximal humeral fractures: Theoretical concept, surgical technique and clinical results”, *International Journal of the Care of the Injured*, **48**(3), S12–S19, Elsevier, Amsterdam, The Netherlands, 2017
- [Jr-71] F. Cordella, F. Di Corato, B. SICILIANO, L. Zollo, “A stochastic algorithm for automatic hand pose and motion estimation”, *Medical & Biological Engineering & Computing*, **55**, 2197–2208, Springer, Heidelberg, Germany, 2017
- [Jr-70] P. Zarafshan, R. Larimi, S. Ali, A. Moosavian, B. SICILIANO, “Which impedance strategy is the most effective for cooperative object manipulation?”, *Industrial Robot: An International Journal*, **44**, 198–209, 2017
- [Jr-69] A. Petit, V. Lippiello, G.A. Fontanelli, B. SICILIANO, “Tracking elastic deformable objects with an RGB-D sensor for a pizza chef robot”, *Robotics and Autonomous Systems*, **88**, 187–201, 2017
- [Jr-68] I. Cerulo, F. Ficuciello, V. Lippiello, B. SICILIANO, “Teleoperation of the SCHUNK S5FH underactuated anthropomorphic hand using human hand motion tracking”, *Robotics and Autonomous Systems*, **89**, 75–84, Elsevier, Amsterdam, The Netherlands, 2017
- [Jr-67] A.C. Satici, A. Donaire, B. SICILIANO, “Intrinsic dynamics and total energy-shaping control of the ballbot system”, *International Journal of Control*, **90**, 2734–2747, Taylor & Francis, London, UK, 2017
- [Jr-66] A. Donaire, J.G. Romero, R. Ortega, B. SICILIANO, M. Crespo, “Robust IDA-PBC for underactuated mechanical systems subject to matched disturbances”, *International Journal of Robust and Nonlinear Control*, **27**, 1000–1016, Wiley, New York NY, USA, 2017

- [Jr-65] R. Mebarki, V. Lippiello, B. SICILIANO, “Vision-based and IMU-aided scale factor-free linear velocity estimator”, *Autonomous Robots*, **41**, 903–917, Springer, Heidelberg, Germany, 2017
- [Jr-64] A. De Stefano, R. Tausch, P. Santos, A. Kuijper, G. Di Gironimo, D.W. Fellner, B. SICILIANO, “Modeling a virtual robotic system for automated 3D digitization of cultural heritage artifacts”, *Journal of Cultural Heritage*, **19**, 531–537, Elsevier, Amsterdam, The Netherlands, 2016
- [Jr-63] F. Ruggiero, V. Lippiello, B. SICILIANO, “The effect of shapes in input-state linearization for stabilization of nonprehensile planar rolling dynamic manipulation”, *IEEE Robotics and Automation Letters*, **1**, 492–499, IEEE Press, Piscataway NJ, USA, 2016, also in *2016 IEEE International Conference on Robotics and Automation*, Stockholm, S, May 2016
- [Jr-62] P. Cigliano, V. Lippiello, F. Ruggiero, B. SICILIANO, “Robotic ball catching with an eye-in-hand single-camera system”, *IEEE Transactions on Control System Technology*, **23**, 1657–1671, IEEE Press, Piscataway NJ, USA, Sep. 2015
- [Jr-61] R. Mebarki, V. Lippiello, B. SICILIANO, “Nonlinear visual control of unmanned aerial vehicles in GPS-denied environments”, *IEEE Transactions on Robotics*, **31**, 1004–1017, IEEE Press, Piscataway NJ, USA, Aug. 2015
- [Jr-60] F. Ficuciello, L. Villani, B. SICILIANO, “Variable impedance control of redundant manipulators for intuitive human–robot physical interaction”, *IEEE Transactions on Robotics*, **31**, 850–863, IEEE Press, Piscataway NJ, USA, Aug. 2015
- [Jr-59] G. Palli, C. Melchiorri, G. Vassura, U. Scarcia, L. Moriello, G. Berselli, A. Cavallo, G. De Maria, C. Natale, S. Pirozzi, C. May, F. Ficuciello, B. SICILIANO, “The DEXMART Hand: Mechatronic design and experimental evaluation of synergy-based control for human-like grasping”, *International Journal of Robotics Research*, **33**, 799–824, Sage Publications, London, UK, Apr. 2014
- [Jr-58] F. Ficuciello, G. Palli, C. Melchiorri, B. SICILIANO, “Postural synergies of the UB Hand IV for human-like grasping”, *Robotics and Autonomous Systems*, **62**, 515–527, Elsevier, Amsterdam, The Netherlands, Apr. 2014
- [Jr-57] F. Cordella, L. Zollo, A. Salerno, D. Accoto, E. Guglielmelli, B. SICILIANO, “Human hand motion analysis and synthesis of optimal power grasps for a robotic hand”, *International Journal of Advanced Robotic Systems*, **11**(37), InTech, Rijeka, Croatia, 2014
- [Jr-56] H. Sadeghian, L. Villani, M. Keshmiri, B. SICILIANO, “Task-space control of robot manipulators with null-space compliance”, *IEEE Transactions on Robotics*, **30**, 493–506, IEEE Press, Piscataway NJ, USA, Dec. 2013
- [Jr-55] V. Lippiello, F. Ruggiero, B. SICILIANO, “3D monocular robotic ball catching”, *Robotics and Autonomous Systems*, **61**, 1615–1625, Elsevier, Amsterdam, The Netherlands, Dec. 2013
- [Jr-54] R. Carloni, V. Lippiello, M. D’Auria, M. Fumagalli, A.Y. Mersha, S. Stramigioli, B. SICILIANO, “Obstacle avoidance techniques for unmanned aerial vehicles”, *IEEE Robotics and Automation Magazine*, **2**(4), 22–31, IEEE Press, Piscataway NJ, USA, Dec. 2013
- [Jr-53] G. Veiga, C. Silva, R. Araujo, N. Pires, B. SICILIANO, “The ECHORD project proposals analysis — Research profiles, collaboration patterns and research topic trends”, *Expert Systems with Applications*, **40**, 7132–7140, Elsevier, Amsterdam, The Netherlands, Dec. 2013
- [Jr-52] H. Sadeghian, L. Villani, M. Keshmiri, B. SICILIANO, “Dynamic multi-priority control in redundant robotic systems”, *Robotica*, **31**, 1155–1167, Cambridge University Press, Cambridge, UK, Oct. 2013
- [Jr-51] V. Lippiello, B. SICILIANO, L. Villani, “Multi-fingered grasp synthesis based on the object dynamic properties”, *Robotics and Autonomous Systems*, **61**, 626–636, Elsevier, Amsterdam, The Netherlands, June 2013
- [Jr-50] V. Lippiello, F. Ruggiero, B. SICILIANO, L. Villani, “Visual grasp planning for unknown objects using a multi-fingered robotic hand”, *IEEE/ASME Transactions on Mechatronics*, **18**, 1050–1059, IEEE Press, Piscataway NJ, USA, June 2013

- [Jr-49] V. Lippiello, B. SICILIANO, L. Villani, “A grasping force optimization algorithm for multi-arm robots with multi-fingered hands”, *IEEE Transactions on Robotics*, **29**, 55–67, IEEE Press, Piscataway NJ, USA, Feb. 2013
- [Jr-48] F. Cordella, L. Zollo, E. Guglielmelli, B. SICILIANO, “A bio-inspired grasp optimization algorithm for an anthropomorphic robotic hand”, *International Journal on Interactive Design and Manufacturing*, **6**, 113–122, Springer, Heidelberg, Germany, May 2012
- [Jr-47] A. De Santis, G. Di Gironimo, L. Pelliccia, B. SICILIANO, A. Tarallo, “Biomechanically-based motion control for a digital human”, *International Journal on Interactive Design and Manufacturing*, **6**, 1–13, Springer, Heidelberg, Germany, Feb. 2012
- [Jr-46] V. Lippiello, B. SICILIANO, L. Villani, “Interaction control of robot manipulators using force and vision”, *International Journal of Optomechatronics*, **2**, 257–274, Taylor & Francis, London, UK, July 2008
- [Jr-45] A. De Santis, B. SICILIANO, L. Villani, “A unified fuzzy logic approach to trajectory planning and inverse kinematics for a fire fighting robot operating in tunnels”, *Intelligent Service Robotics*, **1**, 41–49, Springer, Heidelberg, Germany, Jan. 2008
- [Jr-44] V. Lippiello, B. SICILIANO, L. Villani, “Position-based visual servoing in industrial multi-robot cells using a hybrid camera configuration”, *IEEE Transactions on Robotics*, **23**, 73–86, IEEE Press, Piscataway NJ, USA, Feb. 2007
- [Jr-43] V. Lippiello, B. SICILIANO, L. Villani, “An open architecture for sensory feedback control of a dual-arm industrial robotic cell”, *Industrial Robot*, **34**, 46–53, Emerald, Bingley, UK, Jan. 2007
- [Jr-42] V. Lippiello, B. SICILIANO, L. Villani, “Adaptive extended Kalman filtering for visual motion estimation of 3D objects”, *Control Engineering Practice*, **15**, 123–134, Elsevier, Amsterdam, The Netherlands, Jan. 2007
- [Jr-41] A. De Luca, B. SICILIANO, L. Zollo, “PD control with on-line gravity compensation for robots with elastic joints: Theory and experiments”, *Automatica*, **41**, 1809–1819, Elsevier, Amsterdam, The Netherlands, Oct. 2005
- [Jr-40] L. Zollo, B. SICILIANO, A. De Luca, E. Guglielmelli, P. Dario, “Compliance control for an anthropomorphic robot with elastic joints: Theory and experiments”, *ASME Journal of Dynamic Systems, Measurement, and Control*, **127**, 321–328, ASME Press, New York NY, USA, Sep. 2005
- [Jr-39] L. Zollo, L. Dipietro, B. SICILIANO, E. Guglielmelli, P. Dario, “A bio-inspired approach for regulating and measuring visco-elastic properties of a robot arm”, *Journal of Robotic Systems*, **22**, 397–419, Wiley, New York NY, USA, Aug. 2005
- [Jr-38] L. Zollo, B. SICILIANO, C. Laschi, G. Teti, P. Dario, “An experimental study on compliance control for a redundant personal robot arm”, *Robotics and Autonomous Systems*, **44**, 101–129, Elsevier, Amsterdam, The Netherlands, Aug. 2003
- [Jr-37] F. Caccavale, B. SICILIANO, L. Villani, “The Tricept robot: Dynamics and impedance control”, *IEEE/ASME Transactions on Mechatronics*, **8**, 263–268, IEEE Press, Piscataway NJ, USA, June 2003
- [Jr-36] L. Villani, C. Natale, B. SICILIANO, C. Canudas de Wit, “An experimental study of adaptive force/position control algorithms”, *IEEE Transactions on Control Systems Technology*, **8**, 777–786, IEEE Press, Piscataway NJ, USA, Sep. 2000
- [Jr-35] M.A. Arteaga, B. SICILIANO, “On tracking control of flexible robot arms”, *IEEE Transactions on Automatic Control*, **45**, 520–527, IEEE Press, Piscataway NJ, USA, Mar. 2000
- [Jr-34] F. Caccavale, B. SICILIANO, L. Villani, “Robot impedance control with nondiagonal stiffness”, *IEEE Transactions on Automatic Control*, **44**, 1943–1946, IEEE Press, Piscataway NJ, USA, Ott. 1999

- [Jr-33] S. Chiaverini, B. SICILIANO, L. Villani, “A survey of robot interaction control schemes with experimental comparison”, *IEEE/ASME Transactions on Mechatronics*, **4**, 273–285, IEEE Press, Piscataway NJ, USA, Set. 1999
- [Jr-32] B. SICILIANO, “The Tricept robot: Inverse kinematics, manipulability analysis and closed-loop direct kinematics algorithm”, *Robotica*, **17**, Cambridge University Press, Cambridge UK, 437–445, July/Aug. 1999
- [Jr-31] B. SICILIANO, “Closed-loop inverse kinematics algorithm for constrained flexible manipulators under gravity”, *Journal of Robotic Systems*, **16**, Wiley, New York NY, USA, 353–362, June 1999
- [Jr-30] F. Caccavale, C. Natale, B. SICILIANO, L. Villani, “Six-dof impedance control based on angle/axis representations”, *IEEE Transactions on Robotics and Automation*, **15**, 289–300, IEEE Press, Piscataway NJ, USA, Apr. 1999
- [Jr-29] B. SICILIANO, L. Villani, “Passivity-based interaction controller and observer for robot manipulators”, *ASME Journal of Dynamic Systems, Measurement, and Control*, **120**, 516–520, ASME Press, New York NY, USA, Dec. 1998
- [Jr-28] F. Caccavale, C. Natale, B. SICILIANO, L. Villani, “Resolved-acceleration control of robot manipulators: A critical review with experiments”, *Robotica*, **16**, 565–573, Cambridge University Press, Cambridge, UK, Sep./Oct. 1998
- [Jr-27] F. Caccavale, S. Chiaverini, B. SICILIANO, “Second-order kinematic control of robot manipulators with Jacobian damped least-squares inverse: Theory and experiments”, *IEEE/ASME Transactions on Mechatronics*, **2**, 188–194, IEEE Press, Piscataway NJ, USA, Sep. 1997
- [Jr-26] B. SICILIANO, L. Villani, “An output feedback parallel force/position regulator for a robot manipulator in contact with a compliant environment”, *Systems & Control Letters*, **29**, 295–300, Elsevier, Amsterdam, The Netherlands, Feb. 1997
- [Jr-25] P. Chiacchio, S. Chiaverini, B. SICILIANO, “Direct and inverse kinematics for coordinated motion tasks of a two-manipulator system”, *ASME Journal of Dynamic Systems, Measurement, and Control*, **118**, 691–697, ASME Press, New York NY, USA, Dec. 1996
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