# *CURRICULUM VITAE*

*Prof. Aleksandar D. Rodić, PhDEE, Scientific advisor*



*Recent photo*

## PERSONAL DATA

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|---|---|
| First name, middle letter | Aleksandar, D. |
| Surname | Rodić |
| Gender | Male |
| Birth date | 28.10.1960 |
| Birth place and country | Belgrade, Serbia |
| Nationality | Serbian |
| Phone | +381(0)11 6774 236 |

## PROFESIONAL DATA

| | |
|---|---|
| Title | Prof. Dr-Ing. |
| Affilation (university / institute) | Institute Mihailo Pupin (IMP) University of Belgrade Belgrade Serbia, Europe |
| Laboratory / Department | Robotics Laboratory |
| Contact adress (street, house number) | Volgina 15 |
| City, post code | Belgrade, 11060 |
| Country | Serbia |
| Telephone | +381 (0)11 6774 236 *(office)* |
| Fax | +381 (0)11 6776 583 |
| e-mail | aleksandar.rodic@pupin.rs |
| URL | http://www.pupin.rs/en/ |
| Skype | arodic960 |

## EDUCATION, TRAINING, SPECIALIZATION, SUMMER SCHOOL

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|---|---|
| | BSME, University of Belgrade, 1985 MSEE, University of Belgrade, 1992 PhDEE, University of Belgrade, 1999 |

## RESEARCH INTEREST & EXPERTIZE

A) *primary*
- Robotics and Intelligent Systems
- Control and Stability
- Large-scale dynamic systems
- System identification, Modeling and Simulation
- Artificial intelligence and Informatics
- Mechanical design
- Renewable energy

B) *particular*
- Service and Personal robots
- Medical and rehabilitation robots

- Bio-inspired systems
- Humanoids
- Wheel-based and track-based mobile robots
- Biomechanics and Bipedal locomotion
- Dual-arm manipulation
- Robot kinematics & dynamics
- Trajectory prediction & path planning
- Simultaneous Localization and Mapping (SLAM)
- Cognitive and behavioral robotics
- Fuzzy logic & decision support systems
- Embedded control
- Unmanned Ground Vehicles (UGV)
- Unmanned Aerial Vehicles (UAV)
- Unmanned Underwater Vehicles (UWV)
- Instrumentation & Measurements
- Sensor data acquisition and data fusion
- Robotic vision
- System integration
- Solar & Wind energy exploitation

## PROFESSIONAL EXPERIANCE& SKILL

- **2014** Visiting professor, ANHUI University of Technology (AHUT), Ma'anshan, China
- **2013** Member of the International Scientific Committee of Robotics Organization RAAD – Robotics in Alpe-Adria-Danube Region
- **2012** Professor of Doctoral studies program, University of Belgrade, Faculty of Electrical Engineering, Department of Automatic Control, Systems and Signals, Belgrade, Serbia
- **2011** Member of the National Scientific Council for Technology Development in Electronics, Telecommunication and Informatics with  Serbian Ministry of Education, Science and Technology Development
- **2010** Head of Robotics Laboratory, Institute Mihailo Pupin, University of Belgrade
- **2009** Adjunct professor, Ph.D. studies program, University of Szeged, Institute for Informatics, Robotics Laboratory, Hungary
- **2004-2013** Visiting Professor, University of Reunion, High School of Engineering - Reunion, France (2004, 2006, 2008, 2009, 2011, 2012, 2013)
- **2009** Academic title: Full professor (Scientific advisor), Serbian Ministry of Education, Science and Technology Development
- **2004** Academic title: Associate professor (Senior Research Associate), Serbian Ministry of Education, Science and Technology Development
- **2000** Member of the Scientific Council of the Mihailo Pupin Institute
- **2000** Academic title: Assistant professor, (Research associate), Serbian Ministry of Education, Science and Technology Development
- **1997** Project manager
- **1987** Research and Developing Engineer

## AWARDS & FELLOWSHIPS

- 2013 Award „**The Manager of the Year 2012 for Innovation  and Science Appliance in Republic of Serbia**", Special annual award for innovation and science appliance, Club of the Economic Journalists, Chamber of Commerce of the Republic Serbia
- 2005 **Alexander von Humboldt Research Fellow**, Technical University of Braunschweig, Institut fuer Angewandte Mechanik, Braunschweig, Germany (3 months)
- 2001-2002 **Alexander von Humboldt Research Fellow**, Technical University of

Braunschweig, Institut fuerVerkhersicherheit und Automatisierungstechnik, Braunschweig, Germany (18 months), *IV-1-7109-JUG/1071157*

- 1998 Special annual Yugoslav award "**The best technical innovation in 1998**", Institute of traffic  CIP, Belgrade, Serbia
- 1991 **UNIDO/UNDP Research Fellow**, Fraunhofer Institut fuer Produktionsanlagen und Konstruktiontechnik (IPK), Berlin, Germany

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*ORGANIZATION MEETINGS, EDITORIAL BOOKS / SCIENTIFIC JOURNALS, JOURNAL REVIEW*

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- Member of the International Scientific Committee of Robotics Organization RAAD – Robotics in Alpe-Adria-Danube Region, 2013 -
- Member of the Scientific Board of the Conference ETRAN – National Conference on Electronics, Telecommunication, Automation and Informatics, Chairman of the special section – Robotics, 2011 –
- Organizer and Chairman of the 2$^{nd}$ International Exploratory Workshop "New Trends in Medical and Service Robotics MESROB 2013", Belgrade, Institute Mihailo Pupin, July, 2013
- Co-editor of the book "New Trends in Medical and Service Robots - Theory and Integrated Applications" published in the Springer monograph series "Mechanisms and Machine Science", 2013
- Editor of the monograph: Contemporary robotics – Challenges and Solutions, ISBN-978-953-307-038-4, InTech, www.intechweb.org, 2009
- Editor of the monograph: Automation and Control – Theory and Practice, InTech, www.intechweb.org, ISBN-978-953-307-039-1, 2009
- Member of the Editorial Board, *International Journal on Advance Robotic Systems*, *InTech*, Open Access Publisher, ISSN: 1729-8806
- Member of the Editorial Board, *Journal Robotics*, MDPI AG, Basel, Switzerland, Open Access Journal, ISSN 2218-6581
- Member of the Editorial Board, *Military Technical Courier*, Ministry of Defense of Republic Serbia, ISSN: 0042-8469
- Member of the Editorial Board, *Scientific Technical Review*, Military Technical Institute-Belgrade, YU ISSN: 1820-0206
- Member of the Editorial Board, *International Journal of Engineering*, Annals of Faculty of Engineering Hunedoara, ISSN: 1584 – 2665
- Scientific reviewer of *IEEE Transactions on Automation Science and Engineering,* ISSN: 1545-5955
- Scientific reviewer of *IEEE Transactions on Systems, Man, and Cybernetics - Part C: Applications and Reviews,* ISSN: 1094-6977
- Scientific reviewer of *International Journal of Humanoid Robotics* (IJHR), Print ISSN: 0219-8436, Online ISSN: 1793-6942
- Scientific reviewer of *Journal of Intelligent and Robotic Systems (JINT)*, Print ISSN: 0921-0296, Online ISSN: 1573-0409
- Scientific reviewer of *Robotica*, Cambridge University Press, ISSN: 0263-5747, EISSN: 1469-8668
- Scientific reviewer of *Autonomous Robots*, Springer, ISSN: 0929-5593 (print version), ISSN: 1573-7527 (electronic version)

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*RESEARCH / DEVELOPING PROJETS*

# Coordination of the International Projects:

1991        UNIDO/UNDP, "Development of software system for modeling, control and simulation of manipulation robots in contact tasks", Fraunhofer Institute for Production Sytems (IPK),

Berlin, Germany (coordinator)

2001-2002    Alexander von Humboldt research project, "A Study on Advanced Active Control of Interactive Road Vehicle Dynamics – Theory, Modelling,  Control and Simulation"Technical University Braunschweig, Germany, (coordinator)

2005    Alexander von Humboldt research project, „Study of the mechanical impact phenomena and their influence upon dynamic performances of biped locomotion mechanisms – theory, modeling, control and simulation", Technical University Braunschweig, Germany (coordinator)

2008-2009    Bilateral French-Serbian project "Advanced mathematical methods in solving complex engineering tasks (MATENG)" coordinator, EGIDE-France and Ministry of Science of Republic Serbia (national coordinator)

2011-2012     Bilateral reserch project between Serbia and Portugal,  "Synthesis of Collaborative Behavior Attributes with Service Robots Based on Visually-Motor Human-Machine Interaction (COLBAR)", Ministry of Education, Science and Technology of Republic Serbia and Ministry of Science of Portugal (national coordinator)

2011-2014    Swiss National Scientific Foundation SNSF IP SCOPES project "Creative Alliance in Robotics Research and Education Focused on Medical and Service Robotics (CARE-robotics)", Project ID: IZ74Z0_137361/1, SNSF SCOPES IP, Switzerland (national coordinator)

2014-2015    European research and development program HORIZON 2020, Coordination support activity project "Researchers' night" (Work Package leader)

2013-2015    Serbian-Chinese science & Technology cooperation 2013-2015, "High speed and high precision robots - path planning, dynamics and control (HIGH-SP ROBOTS)", Institute Mihailo Pupin and University of Anhui, School of Mechanical Engineering, (national coordinator).

2015-2017     Research Group Linkage Program, Alexander von Humboldt Foundation, "Building attributes of artificial emotional intelligence aimed to make robots feel and sociable as humans (Emotionally Intelligent Robots - EI*robots*)", Contract no. 3.4-IP-DEU/112623, University of Kaiserslautern, Institute for infromatics, Robotics department, Germany, (national coordinator)


**Coordination of Recent National Research and Developing Projects:**
2014-2015    "Development of Mobile Robotic Solar Electric Generator for Irrigation in Agriculture", Ministry of Education, Science and Technology Development, Republic of Serbia (Coordinator)

2011-2015    "Research and Development of Ambient Intelligent Service Robots of Antropomorphic Characteristics", TR-35003, Serbian Ministry of Education, Science and Technology Development (Co-coordinator)

2011-2015    "Development of Robot as Device for Overcoming Difficulties in Growth of Children with Disorders", III-44008, Serbian Ministry of Education, Science and Technology Development (Work Package leader)

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| 2013-2015 | "Development of bio-inspired anthropomorphic robot-arm", Mihailo Pupin Institute, Belgrade, Serbia, (Coordinator) |
| 2013-2015 | "Development of bionic multi-finger robot hand", Mihailo Pupin Institute, Belgrade, Serbia (coordinator) |
| 2014-2016 | "Remotely operated underwater robot for search and rescue tasks", Mihailo Pupin Institute, Belgrade, Serbia (coordinator) |

| *COMMUNICATION SKILL* | |
|---|---|
| A) *Mother tongue*<br>B) *First language*<br>C) *Second language*<br>D) *Third language* | Serbian<br>English (fluently)<br>Deutsch (middle level)<br>French (elemantary) |

| *SCIENTIFIC RANKING* | Prof. Dr Aleksandar Rodić, BsME, MsEE, PhDEE |
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*Published books:        1*
*Chapters in books:        9*
*Journal papers:        34*
*Conference papers:  80*
*Total publications:   124*
*Number of citations: 436 (Scopus, Google scholar, Tompson Reuters, Web of Science)*
*SCI H-index:        11*
*University ranking: 300-400 (according to the Shangai list)*

| *TEACHING EXPERIANCE* | |
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- 2001-2002 Graduate courses, Technical University of Braunshweig, Germany, EU
- 2004-2013 Graduate courses, University of La Reunion, France, EU
- 2009-2011 Post-graduate studies program, University of Szeged, Szeged, Hungary, EU
- 2012-        Post-graduate studies program, Topics: Robotics and Autonomous Systems, University of Belgrade, Faculty of Electrical Engineering, Republic of Serbia, EU

| *EDITTING AND REVIEW* | |
|---|---|

- Editor of the research monograph: "Contemporary robotics – Challenges and Solutions", ISBN-978-953-307-038-4, InTech, www.intechweb.org, 2009
- Editor of the research monograph: "Automation and Control – Theory and Practice", InTech, www.intechweb.org, ISBN-978-953-307-039-1, 2009
- Editor of the research monograph: "New Trends in Medical and Service Robots. Theory and Integrated Applications", Series: Mechanisms and Machine Science, Springer Publishing House, Vol. 16, Pisla, D.; Bleuler, H.; Rodic, A.; Vaida, C.; Pisla, A. (Eds.), ISBN 978-3-319-01591-0, 2013
- Editor of the research monograph: "New Trends in Medical and Service Robots. Challenges and Solutions, Series: Mechanisms and Machine Science, Springer Publishing House, Vol. 20, Rodic, A.; Pisla, D.; Bleuler, H.; (Eds.), ISSN: 2211-0984, DOI10.1007/978-3-319-05431-5, 2014
- Reviewer of IEEE Transactions on Automation Science and Engineering
- Reviewer of IEEE Transactions on Systems, Man, and Cybernetics - Part C: Applications and Reviews
- Reviewer of International Journal of Humanoid Robotics (IJHR)
- Reviewer of Robotica, Cambridge University Press
- Reviewer of Autonomous Robots, Springer
- Reviewer of Strojniški vestnik (University of Maribor, Slovenia)
- Reviewer of Scientific Technical Review, VTI, Serbia
- Reviewer of the Arabian Journal for Science and Engineering

# BIBLIOGRAPHY

*Aleksandar D. Rodić*

(Last update, October 2015)

# A. Books / Research monographs

A.1 Rodić, M. Vukobratović, <u>Dynamics, Integrated Control and Stability of Automated Road Vehicles</u>, Research monograph, ibidem-Verlag, Stuttgart, Germany, ISBN: 3-89821-203-3, ([http://www.ibidem-verlag.com/epages/61235722.sf/de_DE/?ObjectPath=/Shops/61235722/Products/3-89821-203-3](http://www.ibidem-verlag.com/epages/61235722.sf/de_DE/?ObjectPath=/Shops/61235722/Products/3-89821-203-3)), 214 pages, 2002

# B. Chapters in books / monographs / thematic proceedings

B.1 Rodić, K. Addi, G. Dalleau, "Adaptive Bio-inspired Control of Humanoid Robots – From Human Locomotion to Artificial Biped Gait of High Perforomences", Chapter in the book <u>Contemporary Robotics – Challenges and Solutions</u>, In-Tech, [www.intechweb.org](www.intechweb.org), ISBN-978-953-307-038-4, pp. 275-300, 2009

B.2 G. Mester, A. Rodić, "Autonomous Locomotion of Humanoid Robots in Presence of Static and Mobile Obstacles – Trajectory Prediction, Path Planning, Control and Simulation", Chapter in the book - <u>Studies in Computational Intelligence</u>, Series Ed.: Kacprzyk, Janusz , Towards Intelligent Engineering and Information Technology, Part III Robotics, Volume 243/2009, pp. 279-293, ISBN 978-3-642-03736-8, Library of Congress: 2009933683, DOI 10.1007/978-3-642-03737-5, Springer, 2009.

B.3 Aleksandar Rodić, Gyula Mester, Ivan Stojković, "Qualitative Evaluation of Flight Controller Performances for Autonomous Quadrotors", pp. 115-134, Chapter in book: <u>Intelligent Systems: Models and Applications</u>, Endre Pap (Ed.), Topics in Intelligent Engineering and Informatics, Vol. 3, Part. 2, ISSN 2193-9411, e-ISSN 2193-942X, ISBN 978-3-642-33958-5, e-ISBN 978-3-642-33959-2, DOI 10.1007/978-3-642-33959-2_7, Springer, 2012.

- B.4 Aleksandar Rodić, Ivan Stojković, "Building of open structure wheel-based mobile robotic platform", in <u>Interdisciplinary Mechatronics: Engineering Science and Research Development</u>, *Handbook,* Editors: Prof. Dr. Maki K. Habib, Prof. Dr. J. Paulo Davim, ISTE-Willey, ISBN: 978-18-4821-418-7, 624 pages, pp. 385-421, London, UK, April 2013

B.5 Aleksandar Rodić, Branko Miloradović, Svemir Popić, Sofija Spasojević, Branko Karan, „Development of Modular Compliant Anthropomorphic Robot Hand", In Book: "New Trends in Medical and Service Robots. Theory and Integrated Applications, Series: <u>Mechanisms and Machine Science</u>, Springer Publishing House, Vol. 16, Pisla, D.; Bleuler, H.; Rodic, A.; Vaida, C.; Pisla, A. (Eds.), 2014, VIII, 238 p. 167, ISBN 978-3-319-01591-0, Due: September 30, 2013.

B.6 Aleksandar Rodić, Khalid Addi, „Mathematical modeling of human affective behavior aiemed to design of robot EI-controller", In Book: "New Trends in Medical and Service Robots. Challenges and Solutions, Series: <u>Mechanisms and Machine Science</u>, Springer Publishing House, Vol. 20, Rodic, A.; Pisla, D.; Bleuler, H.; (Eds.), 384 p., pp. 141-163, 2014, ISSN: 2211-0984, DOI10.1007/978-3-319-05431-5

B.7 Duško Katić, P. Radulović, S. Spasojević, Ž. Đurović „Advanced pose and gesture recognition algorithms using computational intelligence and Microsoft KINECT sensor", In Book: "New Trends in Medical and Service Robots. Challenges and Sollutions, Series: <u>Mechanisms and Machine Science</u>, Springer Publishing House, Vol. 20, Rodic, A.; Pisla, D.; Bleuler, H.; (Eds.), 384 p., pp. 193-202, 2014, ISSN: 2211-0984, DOI10.1007/978-3-319-05431-5

B.8 Aleksandar Rodić, Branko Miloradović, Svemir Popić, Đorđe Urukalo, „On developing lightweight robot-arm of anthropomorphic characteristics", In Book: "New Trends in Medical and Service Robots. Book 3, Series: <u>Mechanisms and Machine Science</u>, Springer Publishing House, Vol. 38, Bleuler, H.; Pisla, D.; Rodic, A.; Bouri, M; Mondada, F; (Eds.), isbn 978-3-319-23831-9, Book ID: 332595 _1_En, 2015.

B.9 M. Tomić, Ch. Vassallo, Ch. Chevallerau, A. Rodić, V. Potkonjak, "Arms motion of a humanoid inspired by human motion" , In Book: "New Trends in Medical and Service Robots. Book 3, Series: <u>Mechanisms</u>

<u>and Machine Science</u>, Springer Publishing House, Vol. 38, Bleuler, H.; Pisla, D.; Rodic, A.; Bouri, M; Mondada, F; (Eds.), isbn 978-3-319-23831-9, Book ID: 332595 _1_En, 2015.

B.10 A. Rodić, M. Vujović, I. Stevanović, M. Jovanović, „Development of human-centered social robot with embedded personality for elderly care", In Book: "New Trends in Medical and Service Robots. Book 3, Series: <u>Mechanisms and Machine Science</u>, Springer Publishing House, Vol. ??, P. Wenger,; (Eds.), 2016 (in print).

B11. A. Rodić, I. Stevanović, M. Jovanović, Đ. Urukalo, "On Building Remotely Operated Underwater Robot-Explorer with Bi-manual Poly-articular System", In Book Series: Advances in Intelligent Systems and Computing, Volume 371, <u>Advances in Robot Design and Intelligent Control,</u> Proceedings of the 24th International Conference on Robotics in Alpe-Adria-Danube Region (RAAD), Edt. Theodor Borangiu, ISBN: 978-3-319-21289-0 (Print) 978-3-319-21290-6 (Online), pp. 481-490, 2015

# C. Papers in international scientific journals

C.1 Rodic, M. Vukobratovic, "User-Oriented Software for Modeling, Control Synthesis and Simulation of Robots in Metal Machining Process", *Mechanism and Machine Theory*, Pergamon Press, ISSN: 0094-114X, Vol. 29, No. 3, pp. 455-478, 1994.

C.2 A. Rodic, M. Vukobratovic, "Contribution to the Controller Design in Tasks of Robotic Deburring", *Mechanism and Machine Theory*, Pergamon Press, ISSN: 0094-114X, Vol. 30, No. 3, pp. 363-382, 1995.

C.3 M. Vukobratovic, A. Rodic, "Control of Manipulation Robots Interacting with Dynamic Environment: Implementation and Experiments", *IEEE Transaction on Industrial Electronics*, ISSN: 0278/0046, Vol. 42, No. 4, pp. 358-367, August 1995.

C.4 A. Rodic, M. Vukobratovic, "Contribution to the Integrated Control Synthesis of Road Vehicles", *IEEE Transaction on Control Systems Technology*, ISSN: 1063-6536, Vol. 7, No. 1, pp. 64-78, January 1999.

C.5 M. Vukobratovic, A. Rodic, Yu. Ekalo, "Impedance Control as a Particular Case of the Unified Approach to the Control of Robots Interacting with a Dynamic Known Environment", *Journal of Intelligent & Robotic Systems*, Theory & Applications, Kluwer Academic Publishers, ISSN: 0921-0296, pp. 191-204, February 1997.

C.6 M. Vukobratovic, Y. Ekalo, A. Rodic, "How to Apply Hybrid Position/Force Control to Robots Interacting with Dynamic Environment", *Journal of Intelligent & Robotic Systems*, Theory & Applications, Kluwer Academic Publishers, ISSN: 0921-0296, 2001.

C.7 M. Vukobratovic, D. Stokic, A. Rodic, M. Vujic, "The Software System for Modeling and Control the Robotized Machining", *Problemi Masinostroenia i Avtomatizacii* (International Journal Engineering & Automation), ISSN: 0234-6206, Vol. 1, pp. 12-17, Moscow, Russia, 1992.

C.8 M. Vukobratovic, A. Rodic, "Assembly of Mechanical Parts as a Control Task of Robots Interacting with Dynamic Environment", *Problemi Masinostroenia i Avtomatizacii* (International Journal Engineering & Automation), ISSN: 0234-6206, pp. 9-19, Vol. 3-4, Moscow, Russia, 1996.

C.9 A. Rodic, M. Vukobratovic, "Design of an Integrated Active Control System of Road Vehicles", *Journal of Computer Application in Technology*, Special issue on Active Structures, InderScience publishers, ISSN: 0952-8091, Vol. 13, Nos. ½, pp. 78-92, January 2000.

C.10 M. Vukobratovic, A. Rodic, "Intelligent Integrated Dynamic Control of Road Vehicles", *Problemi Masinostroenia i Avtomatizacii* (International Journal Engineering & Automation), ISSN: 0234-6206, Moscow, Russia, 2000.

C.11 A. Rodich, D. Katich, M. Vukobratovich, "The Connectionist Compensator for Advanced Integrated Road Vehicle Controller", *Problemi Masinostroenia i Avtomatizacii* (International Journal Engineering & Automation Problems), ISSN: 0234-6206, Vol. 2, No. 1, pp. 27-39, Moscow, Russia, 2001

C.12 A. Rodic, M. Vukobratovic "Advanced Control and Stability of Autonomous Road Vehicles, PART I: Synthesis of a hybrid neuro-dynamic controller", *International Journal of Computer Application in Technology*, InderScience publishers, ISSN: 0952-8091, Vol. 15, No. 6, pp. 233-247, 2002

C.13 M. Vukobratovic, A. Rodic, "Advanced Control and Stability of Autonomous Road Vehicles, PART II: Practical stability of road vehicles", *International Journal of Computer Application in Technology*, InderScience publishers, ISSN: 0952-8091, Vol. 15, No. 6, pp. 248-263, 2002.

C.14 M. Vukobratović, A. Rodić, "Contribution to the Integrated Control of Biped Locomotion Mechanisms", *International Journal of Humanoid Robotics*, World Scientific Publishing Company, New Jersey, London, Singapore, ISSN: 0219-8436, Vol. 4, No. 1, pp. 49-95, (March 2007)

C.15 K. Addi, D. Goeleven, A. Rodic, "Nonsmooth Mathematical Modelling and Numerical Simulation of a Spatial Vehicle Dynamics", *Zeitschrift für Angewandte Mathematik und Mechanik (ZAMM)*, Wiley-VCH Verlag GmbH & Co. KGaA - Weinheim, ISSN: 0044-2267, DOI 10.1002/zamm.200410235, pp. 1-25 (2005)

C.16 D.Katić, A.Rodić, M.Vukobratović, "Hybrid Dynamic Control Algorithm For Humanoid Robots Based On Reinforcement Learning", *Journal of Intelligent & Robotic Systems*, Springer, ISSN: 0921-0296, No.1, 2008, pp.3-30.

C.17 M. Vukobratovic, V. Potkonjak, A. Rodic, "Contribution to the Dynamic Study of Humanoid Robots Interacting with Dynamic Environment", *Robotica*, CAMBRIDGE university press, ISSN: 0263-5747, United Kingdom, Vol. 22, pp. 439-447, 2004

C.18 A. Rodić, M. Vukobratović, "Control of Dynamic Balance of Biped Locomotion Mechanisms in Service Tasks Requiring Appropriate Trunk Postures", *Problemi Masinostroenia i Avtomatizacii* (International Journal Engineering & Automation Problems), ISSN: 0234-6206, International journal, ISSN: 0234-6206, Vol. 5, No. 1, pp. 4-22, 2006

C.19 D.Katić, A.Rodić, M.Vukobratović," Reinforcement Learning Control Algorithm for Humanoid Robot Walking", *International Journal of Information & Systems Sciences*, ISSN: 1708-296X, Vol.4, No.2, pp.256-267, 2007.

C.20 A. Rodić, M. Vukobratović, K. Addi, G. Dalleau, "Contribution to the Modeling of Non-smooth, Multi-point Contact Dynamics of Biped Locomotion – Theory and Experiments", *Robotica*, CAMBRIDGE university press, ISSN: 0263-5747, Vol. 26, Issue, 02, pp. 157-175, March, 2008

C.21 K. Addi, Aleksandar Rodic, "Impact dynamics in biped locomotion analysis: Two modelling and implementation approaches", *AIMS Journal on Mathematical Biosciences and Engineering*, http://aimsciences.org/journals/ displayPapers1.jsp?pubID=374, Vol. 7, No. 3, pp. 479-504, 2010

C.22 Gyula, M., Rodic, A.," Sensor-Based Intelligent Mobile Robot Navigation in Unknown Environments" *International Journal of Electrical and Computer Engineering Systems IJECES*, Published by Faculty of Electrical Engineering "Josip Juraj Strossmayer" University of Osijek, Croatia, Volume 1, Number 2, Print ISSN: 1847-6996, Online ISSN: 1847-7003, http://www.etfos.hr/ijeces/, pp. 1-8, December 2010

C.23 K. Addi, Z. Despotovic, D. Gouleven, A. Rodic, "Modelling and analysis of a non-regular electronic circuit via a variational inequality formulation Applied Mathematical Modelling" *, in journal Applied Mathematical Modelling*, 2011.

C.24 Aleksandar Rodić, Gyula Mester, The Modeling and Simulation of an Autonomous Quad-rotor Microcopter in a Virtual Outdoor Scenario , Acta Polytechnica Hungarica, Journal of Applied Sciences, Vol. 8, Issue No. 4, 1785-8860**,** pp. 107-122, 2011.

C.25 Gyula Mester, Aleksandar Rodic, "Contribution to the Simulation of Humanoid Kondo Robot", Annals of Faculty of Engineering Hunedoara – International Journal of Engineering, Tome IX, Fascicule 1, pp. 73-78, ISSN 1584 – 2665, http://annals.fih.upt.ro/pdf-full/2011/ANNALS-2011-1-08.pdf, 2011.

C.26 A. Rodic, "Intelligent Service Robotic Systems Navigation, Motion Planning and Control of Autonomous Wheeled Mobile Robots in Labyrinth Type Scenarios", *The IPSI BgD Transactions on Internet Research Multi-, Inter-, and Trans-disciplinary Issues in Computer Science and Engineering*, A

publication of IPSI Bgd Internet Research Society, New York, Frankfurt, Tokyo, Belgrade, Guest Editor Prof. G. Mester, July 2012, Volume 8, Number 2, pp. 2-9 (ISSN 1820-4503), http://www.internetjournals.net/journals/papers/2012julyFullJournal.pdf

C.27 Miomir Vukobratović, Branislav Borovac, Aleksandar Rodić, Duško Katić and Veljko Potkonjak, "A Bio-Inspired Approach to the Realization of Sustained Humanoid Motion", *International Journal of Advanced Robotic Systems*, InTech, DOI: 10.5772/52419, Vol. 9, pp. 201-212, 2012, 1729-8806, http://www.intechopen.com/journals/international_journal_of_advanced_robotic_systems

C. 27 A. Rodic, G. Mester, 'Sensor-based Navigation and Integrated Control of Ambient Intelligent Wheeled Robots with Tire-Ground Interaction Uncertainties', *Acta Politechnica Hungarica*, Volume 10, Issue Number 3, pp. 113/133, 2013, ISSN: 1785/8860, *DOI: 10.12700/APH.10.03.2013.3.9*

C.28 Amit Ailon, Aleksandar Cosic, Ilan Zohar and Aleksandar Rodic, "Control algorithms for driving mobile robots with restricted inputs", In Journal: *Dynamics of Continuous, Discrete & Impulsive Systems*, Series B: Applications & Algorithms 20 (2013), Copyright c 2013 Watam Press, Curtin University, Canada, pp. 135-161, 2013

C.29 M. Jovanović, V. Vujović, A. Rodić, V. Potkonjak, „Kinematic model of NAO humanoid robot", *Int. Journal Robotica & Management*, Ed. Robotics Society of Romania, Vol. 19, No. 1, pp. 21-26, ISSN: 1453-2069, June, 2014

C.30 A. Rodić, M. Jovanović, I. Stevanović, B. Karan, V. Potkonjak, "Building Technology Platform Aimed to Development Service Robots with Embedded Personality and Enhanced Communication with Social Environment", Digital Communications and Networks, Elsevier, ISSN: 2352-8648, DOI: 10.1016/j.dcan.2015.03.002, No. 1, 2015, pp. 112-124

# D. Papers in national scientific journals

D.1 Rodić, D. Katić, "Intelligent Control of Road Vehicles by Implementation of Artificial Neural Networks", *Tehnika*, YU ISSN: 0040-2176, UDC: 62(062.2) (497.1), Savez inženjera i tehničara Srbije, No. 5/04, pp. 1-12, 2004

D.2 A. Rodić, "Towards Unmanned Autonomous Road Vehicles through Building of Intelligent Control System Based on a Cognitive Driver Model", *Scientific Technical Review*, YU ISSN 1820-0206, Vol. LVIII, pp. 61-68, 2008,

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F.32 Ilija Stevanović, Svemir Popić, Aleksandar Rodić, Željko Despotović, Miloš Jovanović, "Pokretni robotiyovani solarni generator – primer konstruktivnog rešenja mehaničke strukture", Zasedanje RO2.6, Zlatibor, Serbia, June 03-06, 2013.

F.33 Petar Radulović, Željko Đurović, Duško Katić, Aleksadar Rodić, "Prepoznavanje gestova tijela fuzzy klasifikatorom korišćenjem Kinect kamere", Zasedanje RO3.3, Zlatibor, Serbia, June 03-06, 2013.

F.34 Petar B. Petrović, Aleksandar Rodić, Vladimir R. Milačić, "Robotika u industrijalizaciji ekonomskog sistema Srbije", Zasedanje RO3.4, Zlatibor, Serbia, June 03-06, 2013.

F.35 Жељко Деспотовић, Александар Родић , Илија Стевановић, Милош Јовановић, Свемир Попић, Прво саветовање са међународним учешћем - ИНФОРМАЦИОНЕ ТЕХНОЛОГИЈЕ , РАЗВОЈ И ПРИМЕНА У
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# G. Technical solutions, software products & patents

G.1 Software system for microprocessor robot controller based on INTEL 8086/8087, project for Russian industry, 1987.

G.2 FMS – software package for simulation and development of flexible manufacturing systems, VTI Serbia,, 1988.

G.3 MANSIMED – software package for educational purposes: modeling, simulation and CAD of control of manipulation robots in industry, for Technical faculties in Serbia and IPK Fraunhofer (Berlin, Germany), 1989.

G.4 Hardware-Software simulator of general purpose air-jet, Military project,, 1989.

G.5 Control and navigation system (software modules) for simulator of unmanned (pilotless) aircraft, VTI Serbia, 1991.

G.6 A Toolbox System for Design of Task-Oriented Industrial Robot Controllers, European project, EEC-Contract no. C/1*-CT91-0892 (LNBE), Fraunhofer Institute IPK, Berlin, Germany, 1992.

G.7 CONMOT – software package for modeling, simulation and CAD of control of manipulation robots in contact industrial tasks (compliant motion), for domestic industry and research centres, 1993.

G.8 DVL+ Automotive Engineering Toolbox – Advanced software system for modeling, control and simulation of automotive systems with driver-vehicle in the loop, Deutsche Luft und Raumfahrt (DLR), Institute for transportation systems and Technische Universitaet Braunschweig, Braunschweig, Germany, 2005

G.9 HRSP Humanoid Robot Simulation Platform – Customized software for modeling and simulation of biped locomotion robots (humanoids), Research software delivered to French, Italian and Hungary academic institutions, 2007.

G.10 MSHUB-3D Customized Software Interface for Enhanced 3D-Sensing, Modeling and Simulation of Human Biomechanics for Use with Marker-Based Capture Motion Systems, University of Reunion, France, 2008.

G.11 Virtual WRSN – Matlab/Simulink research purpose software for modeling, simulation and control synthesis of wireless robot-sensor networked systems, for academic institutions, 2011

G.12 MARSS – Micro Aerial Rotorcraft Software Simulator, Matlab/Simulink research purpose software for modeling and simulation of unmanned micro aerial rotorcrafts for academic institutions, 2011/2012.

G.13 imp-MRSG – Mobile Robotized Solar Generator for Use in Agriculture, Institute Mihajlo Pupin & Regional Development Agency of Bačka, 2013.

G.14 Pupin hand – Prototype of a modular compliant anthropomorphic hand for service robots and prosthesis, Institute Mihajlo Pupin, 2013.

G.15 RECIPLET – multi-media collector of ecologic waste, OCTOPUS – Organization for support of civil society, December 2013

# H. Workshops, Tutorials

H.1 Aleksandar Rodić, Gyula Mester, "Remotely Controlled Ground-Aerial Robot-Sensor Network for 3D Environmental Surveillance and Monitoring", TAMOP 422 Workshop, Szeged, Hungary, 2011.

H.2 Aleksandar Rodić, Gyula Mester, "Sensor-Based Navigation, Motion Planning and Control of Autonomous Indoor Ambient Adaptive Wheel-Based Robots in Environments with Contingency Risks", TAMOP 422 Workshop, Budapest, Hungary, 2011.

H.3 Aleksandar Rodić, Gyula Mester, "Virtual WRSN – Modeling and Simulation of Wireless Robot-Sensor Networked Systems", TAMOP 422 Workshop, University of Szeged, Szeged, Hungary, 2010.

H.4 Aleksandar Rodić, Gyula Mester, "Autonomous Locomotion of Humanoid Robots in Presence of Mobile and Immobile Obstacles - Path Planning, Trajectory Prediction, Control and Simulation", TAMOP 422 Workshop, University of Szeged, Szeged, Hungary, 2010.

H.5 Gyula Mester, Aleksandar Rodic, "Autonomous Locomotion of Humanoid Robots in Presence of Mobile and Immobile Obstacles", Budapest Tech, Jubilee Conference, Budapest, Hungary, 2009.

H.6 Aleksandar Rodić, "New Frontiers in Service Robotics", The 1st International Exploratory Workshop on "New Trends in Medical and Service Robotics (MESROB 2012)", TU Cluj-Napoca, Romania, June 2012.

H.7 Aleksandar Rodić, "Building of Artificial Emotional and Social Behavior Attributes with Service Robots", The 2nd International Exploratory Workshop on "New Trends in Medical and Service Robotics (MESROB 2013)", Institute Mihajlo Pupin, Serbia, July 2013.

H.8 Aleksandar Rodić, "Developing a lightweight robot-arm of anthropomorphic characteristics", The 3rd International Exploratory Workshop on "New Trends in Medical and Service Robotics (MESROB 2014)", EPFL, Lausanne, Switzerland, July, 10th-11th, 2014.

# I. Plenary lectures and Invited lectures

I.1 A. Rodić, , "Building attributes of artificial affective and social behavior in robots", The 17th International multiconference Information Society (IS 2014), Institut "Jožef Štefan", Ljubljana, Slovenia, October, 8th, 2014

I.2  A. Rodić, "Cognitive robots of human character", ANHUI University of Technology (AHUT), Ma'anshan, Anhui, China, September, 29th, 2014

I.3  A. Rodić, "Cognitive robots of human character"On developing lightweight robot-arm of anthropomorphic characteristics, ANHUI University of Technology (AHUT), Ma'anshan, Anhui, China, September, 25th, 2014