

Prilog 1

Rad i doprinosi Veljka Potkonjaka 2003 – 2012

Datum: juni 2013

SADRŽAJ:

1. Lični podaci
2. Visoko obrazovanje
3. Istraživačka interesovanja
4. Iskustvo – karijera (akademsko i neakademsko)
5. Publikacije
6. Citiranost
7. Urađene recenzije i evaluacije
8. Profesionalno iskustvo
9. Nagrade i priznanja
10. Nastava
11. Rukovođenje doktoratima i magistraturama



LIČNI PODACI

Ime: **Veljko N. Potkonjak**

Datum rođenja: 25. juli 1951. Živi i radi u Beogradu.

Zvanje: redovni profesor

Zaposlen u:

Elektrotehnički fakultet, Univerzitet u Beogradu

Adresa: Bulevar Kralja Aleksandra 73, 11000 Beograd

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E-mejl: potkonjak@yahoo.com

Državljanstvo: Srbija

VISOKO OBRAZOVANJE

- 1974, **Dipl.inž.**, Elektrotehnički fakultet, Univerzitet u Beogradu.
- 1977, **Magistar**, Elektrotehnički fakultet, Univerzitet u Beogradu.
- 1981, **Doktor nauka**, Elektrotehnički fakultet, Univerzitet u Beogradu.

ISTRAŽIVAČKA INTERESOVANJA

Dinamika robota, računarsko projektovanje robota, kinematička redundansa, biomehanika, čovekoliki i antropomimetički roboti, biološki inspirisana robotika, aktivni sistemi, automatizacija proizvodnje, mehatronika, računarski podržano učenje (e-learning) i učenje na daljinu (distance learning).

ISKUSTVO – KARIJERA (2003-2012)

Akademsko – u zemlji:

Elektrotehnički fakultet, Univerzitet u Beogradu
i dalje; *Profesor*, oblast: *Robotika*

Visoka tehnička škola strukovnih studija (ex. Politehnička akademija), Beograd
do 2012.; *Profesor*, oblast: *Elektrotehnika*

Vikoka škola elektrotehnike i računarstva strukovnih studija, Beograd
i dalje; *Profesor*, oblasti: *Mehanika, Kibernetika, Robotika i Automatizacija*

Akademsko – u inostranstvu:

Instituto Superior Tecnico / Institute for Systems and Robotics, Lisabon, Portugalija,
tokom 2010., 2011. i 2012.; *Visiting Professor*

Studijske posete (mesec ili duže):

National Technical University of Athens, Atina, Grčka, u 2009.

Editor u međunarodnim časopisima sa impakt faktorom:

International Journal of Humanoid Robotics (publ. World Scientific)
i dalje, *Associate Editor*

International Journal of Advanced Robotic Systems (publ. INTECH)
od 2011 – i dalje, *Član Editorskog odbora*
od 2012 – i dalje, *Topic Editor* za temu “Robotics and Biomechanics”

Rukovodeći-administrativni položaji:

Upravni odbor Instituta “M. Pupin”, Beograd.
2005-2008; *Predsednik Odbora*
2008 – i dalje; *član Odbora*

Upravni odbor Zavoda za vrednovanje kvaliteta obrazovanje i vaspitanja, Beograd.
2005 – i dalje; *član Odbora*

Ekspertski položaji:

Skupština Grada Beograda
2006-2008; Član Komisije za dodelu Nagrade Beograda u oblasti inovacija.

Evropska komisija
2006; Evaluator istraživačkih projekata programa FP6 (u oblasti Robotike)

Ministarstvo obrazovanja Srbije i Evropska agencija za rekonstrukciju
2006-2007; Ekspert-konsultant za uvođenje Mehatronike u srednje stručne škole

Nacionalni savet za obrazovanje – Komisija za akreditaciju
2007 – i dalje; recezent za akreditaciju visokoškolskih institucija

Evropska komisija
2009-12; Evaluator, recezent i izvestilac za Calls 1, 2 i 3, FP7 makro projekta ECHORD

Ministarstvo za obrazovanje, Zavod za unapređenje obrazovanja.
2010-2011; Predsednik komisije za inoviranje profila i nastavnih planova i programa srednjih stručnih škola u oblasti elektrotehnike.

Članstvo u organizacijama:

Srpsko naučno društvo
i dalje; *član*

Akademije inženjerskih nauka Srbije.
i dalje; *redovni član*

ETTRAN, Srbija
do 2010.; *predstavnik-rukovodilac sekcije za Robotiku* u Odboru za organiz. naučnih skupova
od 2011.; *član Predsedništva* ETRAN-a

PUBLIKACIJE (2003-2012)

(A) Monografije, knjige i poglavlja

Monografija – istraživačka:

1. M. Vukobratovic, V. Potkonjak, V. Matijevic, Dynamics of Robots with Contact Tasks, Kluwer Academic Publishers, (2003), (248 pages).

Poglavlje:

2. V. Potkonjak, M. Vukobratovic, K. Babkovic, B. Borovac, Chapter: Dynamics and Simulation of General Human and Humanoid Motion in Sports;
publikovano u: the book by Nigel Pope (Editor): Digital Sport for Performance Enhancement and Competitive Evolution: Intelligent Gaming Technologies; Information Science Reference – an imprint of IGI Global, USA, May 2009;
takođe publ. u: the book by Information Resources Management Association (USA), Gaming and Simulations: Concepts, Methodologies, Tools and Applications; Premier Reference Source – IGI Global, (DOI: 10.4018/978-1-60960-195-9, ISBN13: 9781609601959, ISBN10: 1609601955, EISBN13: 9781609601966), pages 998-1022, November 2010.

Kao koeditor:

3. A. Kecskemethy, V. Potkonjak, A. Muller (editors), Interdisciplinary Applications of Kinematics, (Proc. Intl. Conf. Lima, Peru, January 9-11, 2008.) (publ. by Springer in 2011, ISBN 978-94-007-2977-3)

(B) Radovi u međunarodnim časopisima sa impakt faktorom

Pozvani rad:

1. M. Vukobratovic, B. Borovac, A. Rodic, D. Katic, V. Potkonjak, "A Bio-Inspired Approach to the Realization of Sustained Humanoid Motion", International Journal of Advanced Robotic Systems (InTech), Special Issue: Biomechanics and Robotics – A Fruitful Interaction, Vol. 9, Paper 201, pp. 1-16, 2012. (kategorija M23, IF za 2011=0.375)

Radovi:

2. V. Potkonjak, S. Tzafestas, D. Kostic, G. Djordjevic, M. Rasic, "The handwriting problem [man-machine motion analogy in robotics]", IEEE Robotics and Automation Magazine, Vol. 10, Issue 1, pp. 35-46, 2003. (kategorija M21, IF=1.103)

3. M. Vukobratovic, V. Potkonjak, A Rodic, "Contribution to the dynamic study of humanoid robots interacting with dynamic environment", *Robotica* (Cambridge University Press), Vol. 22, Issue 4, pp. 439-447, 2004. (kategorija M23, IF=0.400)
4. M. Vukobratovic, V. Potkonjak, S. Tzafestas, "Human and Humanoid Dynamics – From the Past to the Future", *Journal of Intelligent and Robotic Systems* (Springer), Vol. 41, Issue 1, pp. 65-84, 2004. (kategorija M23, IF=0.254)
5. M. Vukobratovic, B. Borovac, V. Potkonjak, "Towards a Unified Understanding of Basic Notions and Terms in Humanoid Robotics", *Robotica* (Cambridge University Press), Vol. 25, Issue 1, pp. 87-101, 2007. (kategorija M23, IF=0.410)
6. M. Filipovic, V. Potkonjak, M. Vukobratovic, "Humanoid Robotic System With and Without Elasticity Elements Walking on an Immobile/Mobile Platform", *Journal of Intelligent and Robotic Systems* (Springer), Vol. 48, Issue 2, pp. 157-186, 2007. (kategorija M23, IF=0.459)
7. M. Vukobratovic, V. Potkonjak, K. Babkovic, B. Borovac, "Simulation Model of General Human and Humanoid Motion", *Multibody System Dynamics* (Springer), Vol. 17, Issue 1, pp. 71-96, 2007. (kategorija M23, IF=0.593)
8. M. Vukobratovic, B. Borovac, M. Rakovic, V. Potkonjak, M. Milinovic, "On Some Aspects of Humanoid Robots Gait Synthesis and Control at Small Disturbances", *International Journal of Humanoid Robotics* (World Scientific), Vol. 5, Issue 1, pp. 119-156, 2008. (kategorija M23, IF=0.542)
9. M. Vukobratovic, H. Herr, B. Borovac, M. Rakovic, M. Popovic, A. Hofmann, M. Jovanovic, V. Potkonjak, "Biological Principles of Control Selection for a Humanoid Robot's Dynamic Balance Preservation", *International Journal of Humanoid Robotics* (World Scientific), Vol. 5, Issue 4, pp. 639-678, 2008. (kategorija M23, IF=0.542)
10. M. Vukobratovic, B. Borovac, V. Potkonjak, M. Jovanovic, "Dynamic Balance of Humanoid Systems in Regular and Irregular Gaits: an Expanded Interpretation", *International Journal of Humanoid Robotics* (World Scientific), Vol. 6, Issue 1, pp. 117-145, 2009. (kategorija M23, IF=1.230)
11. V. Potkonjak, M. Vukobratović, K. Jovanović, M. Medenica, "Virtual Mechatronic/Robotic Laboratory – A Step Further in Distance Learning", *Computers and Education* (Elsevier), Vol 55., Issue 2, pp. 465-475, 2010. (kategorija M21, IF=2.617)
12. V. Potkonjak, S. Tzafestas, M. Vukobratovic, M. Milojevic, M. Jovanovic, "Human-and-Humanoid Postures Under External Disturbances: Modeling, Simulation, and Robustness, PART 1: Modeling", *Journal of Intelligent and Robotic Systems* (Springer), Vol. 63, Issue 2, pp. 191-210, 2011. (kategorija M23, IF=0.829)
13. M. Vukobratovic, M. Milojevic, S. Tzafestas, M. Jovanovic, V. Potkonjak., "Human-and-Humanoid Postures Under External Disturbances: Modeling, Simulation, and Robustness, PART 2: Simulation, and Robustness", *Journal of Intelligent and Robotic Systems* (Springer), Vol. 63, Issue 2, pp. 211-231, 2011. (kategorija M23, IF=0.829)
14. V. Potkonjak, B. Svetozarevic, K. Jovanovic, O. Holland, "The Puller-Follower Control of Compliant and Noncompliant Antagonistic Tendon Drives in Robotic Systems", *International Journal of Advanced Robotic Systems* (InTech), Vol. 8, No. 5, pp. 143-155, 2012. (kategorija M23, IF za 2011=0.375)

(C) Radovi u međunarodnim časopisima koji u trenutku publikovanja rada nisu imali impakt faktor

1. V. Potkonjak, M. Vukobratovic, "A Generalized Approach to Modeling Dynamics of Human and Humanoid Motion", *International Journal of Humanoid Robotics* (World Scientific), Vol. 2, Issue 1, pp. 1-24, 2005.
2. V. Potkonjak, "Robotic Handwriting", *International Journal of Humanoid Robotics* (World Scientific), Vol. 2, Issue 1, pp. 105-124, 2005.
3. V. Potkonjak, M. Vukobratovic, K. Babkovic, B. Borovac, "General Model of Dynamics of Human and Humanoid Motion – Feasibility, Potentials and Verification", *International Journal of Humanoid Robotics* (World Scientific), Vol. 3, Issue 1, pp. 21-48, 2006.
4. M. Vukobratović, B. Borovac, V. Potkonjak, "ZMP: A Review of Some Basic Misunderstandings", *International Journal of Humanoid Robotics* (World Scientific), Vol. 3, Issue 2, pp. 153-175, 2006.

(D) Radovi u domaćim časopisima

1. I. Pavlovic, V. Potkonjak, S. Djuricic, "Mathematical modeling in preoperative planning for reconstructive and plastic surgery", Acta chirurgica Iugoslavica, Vol. 52, Issue 3, pp. 87-90, 2005. DOI:10.2298/ACI0503087P
2. V. Antoska, V. Potkonjak, M.J. Stankovski, N. Bascarevic, "Robustness of semi-humanoid robot posture with respect to external disturbances", Facta Universitatis: Series Automatic Control and Robotics, Vol. 11, No. 2, pp. 99-110, 2012.

(E) Radovi u zbornicima međunarodnih konferencija (sa recenzijom)

Pozvani rad (key-note paper)

1. V. Potkonjak, "Robotic Handwriting: Why and How?", Proc. IGS2005 (Intl. Graphonomic Society), Salerno, Italy, June 26-29, 2005. (vidi <http://forums.graphonomics.org/showthread.php?t=116>)

Radovi

2. V. Potkonjak, B. Svetozarevic, K. Jovanovic, O. Holland, "Control Of Compliant Anthropomimetic Robot Joint", Proc. Of ICNAAM 2010 - 8th International Conference of Numerical Analysis and Applied Mathematics (Symp. Computational Geometric Methods in Multibody System Dynamics), 19-25 September 2010, Rhodes, Greece, publ. by American Institute of Physics (Editor T. Simos, CD ISBN 978-0-7354-0831-9), pp. 1271-1274.
3. V. Potkonjak, B. Svetozarevic, K. Jovanovic, O. Holland, "Biologically Inspired Control of a Compliant Anthropomimetic Robot", Proc. 15th IASTED Intl. Conf. on Robotics and Applications, Cambridge, Massachusetts, November 2010, pp.182-189.
4. V. Potkonjak, B. Svetozarevic, K. Jovanovic, and O. Holland, "Anthropomimetic Robot with Passive Compliance – Contact Dynamics and Control", Proc. MED 2011 (19th Mediterranean Conf. on Control and Automation; sponsored by IEEE RA and CSS), IEEE Catalog Number: CFP11MED-CDR, ISBN: 978-1-4577-0123-8, pp. 1059-1064, Corfu, Greece, 20-23 June 2011.
5. V. Potkonjak, K. Jovanovic, B. Svetozarevic, O. Holland, D. Mikicic, "Modeling and Control of a Compliantly Engineered Anthropomimetic Robot in Contact Tasks", In Proceedings of the 35th Mechanisms and Robotics Conference MECH35 (ASME), Washington, DC, USA, August 28-31, 2011.
6. V. Potkonjak, K. Jovanovic, P. Milosavljevic, N. Bascarevic, O. Holland, "The Puller-Follower Control Concept For The Multi-Joint Robot With Antagonistically Coupled Compliant Drives", Proc. 2nd IASTED Intl. Conf. on Robotics (Robo2011), Pittsburgh, USA, November 2011., pages 375-381.
7. P. Milosavljevic, K. Jovanovic, N. Bascarevic, V. Potkonjak, O. Holland, "Heuristic Machine-Learning Approach to the Control of an Anthropomimetic Robot Arm", Proc. 10th IFAC Symposium on Robot Control (SYROCO 2012), pp. 301-306, Dubrovnik, Croatia, September 2012.
8. N. Bascarevic, K. Jovanovic, P. Milosavljevic, V. Potkonjak, O. Holland, "Tip-over Stability Examination of a Compliant Anthropomimetic Mobile Robot", Proc. 2012 IEEE Multi-conference on Systems and Control (IEEE MSC 2012), pp. 1584-1589, Dubrovnik, Croatia, October 2012.
9. V. Potkonjak, M. Tomic, A. Rodic, V. Antoska, "Human-and-Humanoid Motion - Distinguish Between Safe and Risky Mode", Proc. 10th IFAC Symposium on Robot Control (SYROCO 2012), pp. 524-529, Dubrovnik, Croatia, September 2012.
10. V. Potkonjak, N. Bascarevic, P. Milosavljevic, K. Jovanovic, O. Holland, "Experience-Based Fuzzy Control of an Anthropomimetic Robot", Proc. 4th Intl. Conf. on Fuzzy Computation Theory and Application (FCTA2012), within International Joint Conference on Computational Intelligence (CFP IJCCI 2012), pp. 389-394, Barcelona, 5-7 October, 2012.

(F) Radovi na domaćim konferencijama

1. J. Radojičić, D. Surdilović, V. Potkonjak, "Control Algorithms for Pneumatic Artificial Muscles", Proc. ETRAN 2003.
2. J. Radojičić, D. Surdilović, V. Potkonjak, "Nonlinear Control of Pneumatic Artificial Muscles", Proc. ETRAN 2004.
3. M. Filipovic, V. Potkonjak, M. Vukobratovic, "Elastic Humanoid Robotic System walking on a Moving Platform", Proc. ETRAN 2007.

4. A. Rodic, V. Potkonjak, "Towards Advanced Personal Robot Platform – Concept of Intelligent Service Robot of High Performances", Proc. ETRAN 2008.
5. V. Potkonjak, M. Petrović, "Analysis of Posture Robustness Via General Dynamic Model", Proc. ETRAN 2009, Vrnjacka Banja, 2009.
6. M. Vukobratović, V. Potkonjak, M. Jovanović, "Preservation of Dynamic Balance of Humanoid Robots", Proc. ETRAN 2009, Vrnjacka Banja, 2009.
7. M. Tomić, V. Potkonjak, "Čovečiji i čovekoliki hod - razlike između safe i risky moda" (Human and humanoid gait – distinguish between the safe and the risky mode) , Proc. The 54th ETRAN Conference, Donji Milanovac, Serbia, pp. RO1.7-1-4 (2010).
8. M. Vukobratović, V. Potkonjak, M. Jovanović, "N. A. Bernstein - Pioneer in the field of feedback control", Proc. The 54th ETRAN Conference, Donji Milanovac, Serbia, pp. RO1.9-1-4 (2010).
9. P. Milosavljevic, K. Jovanovic, V. Potkonjak, "The Puller-Follower Control Concept in the Multi-Jointed Antropomimetic Robot Body", The 55th ETRAN Conference, Teslic, Bosnia and Herzegovina, June 2011. pp. RO1.7- 1-4
10. M. Jovanovic, V. Potkonjak, „Human Long Jump Simulation Using Deductive Approach”, in Proc. 55th ETRAN Conference, Teslic, Bosnia and Herzegovina, June 2011. pp. RO1.4- 1-4.
11. V. Potkonjak, K. Jovanovic, "Step toward distance learning in engineering disciplines – Virtual laboratory for robotics and mechatronics", The 56th ETRAN Conference, Zlatibor, Serbia, June, 2012. pp RO1.1 – 1-4
12. P. Milosavljevic, N. Bascarevic, V. Potkonjak, "Experience-based control of a robot arm with antagonistic drives", The 56th ETRAN Conference, Zlatibor, Serbia, June, 2012. pp RO2.8 – 1-4
13. V. Antoska, V. Potkonjak, M.J. Stankovski, N. Bascarevic, "Robustness of semi-humanoid robot posture with respect to external disturbances“, XI International SAUM Conference, Nis, Serbia, November 2012., pp. 121-127.

CITIRANOST (2003-2012)

- U periodu od 2003. do 2012. godine rezultati prof. Potkonjaka su ***citirani 273 puta*** (bez samocitata), prema Scopus-u.
- Biografija prof. Potkonjaka prikazana je u *Marquis Who's Who in the World* and *Marquis Who's Who in Science and Engineering*, 2003 i kasnije.
- Biografija prof. Potkonjak prikazana je u *Outstanding Scientists of the 21st Century* (ed. 2007), and in *Top 100 Scientists – 2007* (i kasnije), publikacija International Biographical Centre, Cambridge, England.

RECENZIJE i EVALUACIJE

Recenzije za časopise (abecednim redom):

- Adaptive Behavior (International Society of Adaptive Behavior; publ. SAGE)
- Automatica (IFAC)
- Computers & Education (Elsevier)
- Communications in Nonlinear Science and Numerical Simulation (Elsevier)
- IEEE Transactions on Robotics and Automation
- IEEE Transactions on Systems, Man and Cybernetics
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- Intelligent and Robotic Systems (Kluwer Academic Publ., now Springer)
- International Journal of Humanoid Robotics (World Scientific publ.)
- International Journal of Precision Engineering and Manufacturing (The Korean Society for Precision Engineering)
- Journal of Forensic Document Examiners
- Mechanism and Machine Theory (IFTOMM)
- Mechatronics (Elsevier)

- Military Technical Review (in Serbian)
- Robotics and Autonomous Systems (Elsevier)
- Robotics and CIM (Elsevier)

Recenzije za konferencije

- IROS (IEEE/RSJ Intl. Conf. on Intelligent Robots and Systems)
- ETAN/ETTRAN Conference (Serbia)

Recenzije i finalne evaluacije za projekte:

- Ministarstvo nauke Srbije
- FP6 and FP7 European research program

PROFESIONALNO ISKUSTVO (2003-2012)

Istraživački projekti:

1- *Simulaciona i eksperimentalna platforma za servisne robote*

Finansirano od Ministarstva nauke Srbije, 2002-2005
učesnik

2- *Diagnostics Equipment for Visuo-Motoric Coordination Disorders*

Finansirano od Ministarstva nauke Srbije, 2002-2005
učesnik

3- *Humanoidni robot visokih performansi*

Finansirano od Ministarstva nauke Srbije, 2006-2007
učesnik

4- *Humanoidni roboti – Teorija i primena*

Finansirano od Ministarstva nauke Srbije, 2008-2009
učesnik

5- *Embodied Cognition in a Compliantly Engineered Robot* (EU Collaborative Project)

Finansirano od: European Commission - FP7, 2009-2011
Lokalni rukovodilac (srpski partner u projektu)

6- *Istraživanje i razvoj ambijentalno inteligentnog servisnog robota antropomorfnih karakteristika*

Finansirano od Ministarstva nauke Srbije, 2011-2014
Rukovodilac projekta.

Drugi projekti:

1- *Automatizacija i robotika u srednjem stručnom obrazovanju (Automation and Robotics in Vocational Education and Training)*

Ministarstvo obrazovanja Srbije; Vocational Education and Training Reform Program – An EU Funded project managed by the European Agency for Reconstruction (CARDS Program), 2005.
Rukovodilac projekta

2 – Festival-manifestacija: *Dani budućnosti – Robotika*

Finansirano od Ministarstva obrazovanja i nauke Srbije, septembar-oktobar 2012
Rukovodilac projekta, u saradnji sa centrom za promociju nauke

Ostale aktivnosti:

- Predstavnik za proizvode INTELITEK (Eshed Robotec) i EMCO za Srbiju i Crnu goru, 2002-2003.
- Član programskih odbora većeg broja međunarodnih konferencija.

N A G R A D E i P R I Z N A N J A (2003-2012)

- *Nagrada grada Beograda* za naučni rad (u grupi od četiri naučnika), za 2003.

- *Nagrada grada Beograda* (u grupi od tri) za organizaciju manifestacije *Dani budućnosti – Robotika*, za 2012.

N A S T A V A (2003-2012)

Elektrotehnički fakultet, Beograd

ranije : *Inertial Navigation Sensors*, postdiplomske studije
Projektovanje i primena robotizovanih industrijskih sistema, post dipl.
Specijalni robotski sistemi, V god
Fleksibilni automatizovani sistemi, V god

sada: *Dinamika mehaničkih sistema*, II god.
Mehanika, II god
Hidraulički i pneumatički sistemi, III god.
Robotika i automatizacija, III god
CNC sistemi i fleksibilna automatizacija, IV god.
Biomehanika, IV god
Teorija robotskih sistema, IV god i master studije i doktorske studije
Senzori u robotici, IV god. i master studije
Specijalni robotski sistemi, doktorske studije

Druge visokoškolske institucije:

Elektronski fakultet u Nišu
Tehnički fakultet u Čačku
Visoka tehnička škola strukovnih studija (ex Politehnička akademija), Beograd
Visoka škola elektrotehike i računarstva (ex. Viša elektrotehnička škola), Beograd

Ruovođenje D O K T O R A T I M A i M A G I S T R A T U R A M A (2003-2012)

Mentorsvo na doktoratu - 3

Mentorstvo na magistarskom radu - 7

Mentorstvo na master radu - 9