



Marija Radmilović (maiden name Tomić)

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Date of birth: 14/07/1987 **Nationality**: Serbian

WORK EXPERIENCE

[01/01/2012 – Current]

Assistant Research Professor

Institute Mihajlo Pupin

City: Beograd | **Country**: Serbia

1. **Humanoid Robots** (Control and modeling redundant humanoid robots)
2. **From human motion to humanoid control** (Software simulation of a captured human motion for control a humanoid robot, and mapping human motion to the motion of the humanoid robot)
3. **Artificial intelligence**(Advanced algorithms of artificial intelligence and mashine learning for analysis human motion characteristics and estimation parameters of the robot control algorithms- genetic algorithms, fuzzy logic and neural networks)
4. **Advanced Modeling of Robots**(Advanced modeling techniques -geometric, kinematic and dynamic of robots (tree structure robots, parallel robots, and hybrid robots) composed of rigid links)
5. **Modeling and control of manipulators**(Modeling and control techniques of serial manipulators - robot architectures, geometric modeling, kinematic modeling, dynamic modeling and its applications, inverse kinematic algorithms and optimization algorithms)
6. **Robots in Agriculture**

EDUCATION AND TRAINING

[2006 – 2010]

BS

University of Belgrade, School of Electrical Electrical Engineering Belgrade, Serbia, Serbia <https://www.etf.bg.ac.rs/en/>

Address: Bulevar Kralja Aleksandra 73, 11020, Beograd, Serbia |

[2010 – 2011]

MS

University of Belgrade, School of Electrical Electrical Engineering, Belgrade, Serbia <https://www.etf.bg.ac.rs/en/>

Address: Bulevar Kralja Aleksandra 73, 11020, Beograd |

[2012 – 2018]

PhD

University of Belgrade, School of Electrical Electrical Engineering, Belgrade, Serbia <https://www.etf.bg.ac.rs/en/>

Address: Bulevar Kralja Aleksandra 73, 11020, Belgrade, Serbia |

[2012 – 2018]

PhD

Ecole Centrale de Nantes, Nantes, France <https://www.ec-nantes.fr/english-version>

Address: 1 Rue de la Noë, 44300, Nantes, France |

LANGUAGE SKILLS

Mother tongue(s): Serbian

Other language(s):

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

French

LISTENING B1 READING B1 WRITING A2

SPOKEN PRODUCTION A2 SPOKEN INTERACTION B1

Russian

LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

PUBLICATIONS

- [2024] **Tehnickal solution: Softverski paket HUMANES- "Human Motion Estimator"**
Reference: Marija Radmilović, Branko Lukić
- [2024] **Human motion estimation application for the marker-based motion capture systems**
Marija Radmilovic; Branko Lukić; Filip Bečanović: "Human motion estimation application for the marker-based motion capture systems", IcETRAN 2024
- [2024] **Robotics in agriculture 4.0: an automated seedling production and pest detection**
Marija Radmilovic, Zeljko V. Despotovic, Jelena Kljajic, Uros Ilic: "Robotics in agriculture 4.0: an automated seedling production and pest detection", International Multidisciplinary Conference "Challenges of Contemporary Higher Education" - CCHE 2024
- [2023] **Elbow joint stiffness functional scales based on Hill's muscle model and genetic optimization**
M. Radmilović, Dj. Urukalo, M. M. Janković, S. Dedijer Dujović, T.J. Dimkić Tomić, M. Trumić, K. Jovanović, "Elbow joint stiffness functional scales based on Hill's muscle model and genetic optimization", *Sensors*, 2023, 23, 1709 Write here the description...
Link: <https://doi.org/10.3390/s23031709>
- [2023] **Physical education exercises validation through child-humanoid robot interaction**
T. Knežević, **M. Radmilović,** , J. Borojević, J. Šumarac, M. Švaco, M. Raković, "Physical education exercises validation through child-humanoid robot interaction ", Accepted to 32nd International Conference on Robotics in Alpe-Adria-Danube Region, 2023, Slovenia
- [2023] **Patent: "Robot-kombajn za mašinsko branje, klasifikaciju kvaliteta i pakovanje konzumnih šljiva neposredno u voćnjacima sa pomoćnim sistemom za automatsko odlaganje napunjene ambalaže"**
Aleksandar Rodić; Ilija Stevanović; Uroš Ilić; Jovan Šumarac; Jelena Kljajić; Zeljko Despotović; Marija Radmilovic
П-2023/293
- [2023] **Patent:"Систем за производњу расада применом робота и машинског учења и поступак аутоматизоване производње и неге расада"**

Marija Radmilovic; Jelena Kljajić; Uroš Ilić; Zeljko Despotović; Aleksandar Pavlović; Predrag Đešnić; Jovan Šumarac; Ilija Stevanović; Aleksandar Rodić

PAT: П-2023/0268

- [2023] **Robotizovani i automatizovani sistem za proizvodnju sadnica i otkrivanje parazita**
- Marija Radmilovic**, Zeljko Despotović, Uroš Ilić, Jovan Šumarac, Jelena Kljajić, Aleksandar Pavlović, Predrag Đešnić: "Robotizovani i automatizovani sistem za proizvodnju sadnica i otkrivanje parazita", XI savetovanje energetska efikasnost i obnovljivi izvori energije
- [2023] **Human motion behavior evaluation: the possibility of improving human-robot collaboration**
- Emilija Stanković; Jelena Kljajić; Jovan Šumarac; **Marija Radmilović**. "Human motion behavior evaluation: the possibility of improving human-robot collaboration", 2023 10th International Conference on Electrical, Electronic and Computing Engineering (IcETRAN)
- Link:** <https://ieeexplore.ieee.org/document/10192194/authors#authors>
- [2023] **Invited paper: "Robotics in Agriculture 4.0"**
- Marija Radmilović:** "Robotics in Agriculture 4.0", 2023 10th International Conference on Electrical, Electronic and Computing Engineering (IcETRAN), **Invited paper**
- [2021] **Influence of muscle co-contraction indicators for different task conditions**
- M. Radmiovčić**, Đ. Urukalo, M. Petrović, F. Bečanović, K. Jovanović (award for the best paper), "Influence of muscle co-contraction indicators for different task conditions", *The 8st IcETRAN Conference*, Stanišić, Bosnia and Hercegovina, 2021.
- [2019] **Large scale data acquisition system for real time measurement**
- M. Jovanović, Ž. Despotović, A. Rodić, **M. Radmilović**, M. Tajdić, "Large scale data acquisition system for real time measurement", 18th International Symposium INFOTEH-JAHORINA, 20-22 March 2019.
- [2018] **Human to humanoid motion conversion for dual arm manipulation tasks**
- Tomić M.**, Chevallereau Ch., Jovanović K., Potkonjak V., Rodić A.: Human to humanoid motion conversion for dual arm manipulation tasks, *Robotica*, 2018, pp. 1-21
- [2018] **Toward optimal mapping of human dual-arm motion to humanoid motion for tasks involving contact with the environment**
- Tomić M.**, Jovanović K., Chevallereau Ch., Potkonjak V., Rodić A.: Toward optimal mapping of human dual-arm motion to humanoid motion for tasks involving contact with the environment, *International Journal of Advanced Robotic Systems*, Vol 15(1), 2018
- [2018] **Technical solution: "Merni, akvizicijski I upravljački system univerzalne ispitne stanice za helikopterske gasoturbinske motore"**
- M. Jovanović, M. Radmilović, A. Ribić, Ž. Despotović, A. Rodić, V. Kvirgić, "Merni, akvizicijski I upravljački system univerzalne ispitne stanice za helikopterske gasoturbinske motore", 2018, Korisnik Vazduhoplovni zavod "Moma Stanojlović", Batajnica, Beograd

- [2017] **Embodiment of Human Personality with EI-Robots by Mapping Behaviour Traits from Live-Model**
- Rodić A., Urukalo Đ., Vujović M., Spasojević, S., **Tomić, M.**, Berns, K., Al-Darraj, S. and Zafar, Z.: Embodiment of Human Personality with EI-Robots by Mapping Behaviour Traits from Live-Model, - Advances in Robot Design and Intelligent Control (Springer), Vol 540, No 7, 2017, pp. 438-448
- [2017] **Building of Hyper-redundant Under-Actuated Soft Robotic Arm with 20DOF**
- Ilija S., Aleksandar R., Miloš J., **Marija T.:** Building of Hyper-redundant Under-Actuated Soft Robotic Arm with 20DOF, Advances in Service and Industrial Robotics, Mechanisms and Machine Science 49 (Springer), 2017, pp. 681-688.
- [2016] **Arms motion of a humanoid inspired by human motion**
- Tomić M.**, Vassallo Ch., Chevallereau Ch., Rodić A., Potkonjak V.: Arms motion of a humanoid inspired by human motion, - New Trends in Medical and Service Robotis, Springer, Vol 38, No 3, 2016, pp. 227-238.
- [2015] **Solving Inverse Kinematics of Hyper-Redundant Multi-Links Flexible Robot-modeling and simulation**
- M. Tomić**, A. Rodić and Đ. Urukalo, "Solving Inverse Kinematics of Hyper-Redundant Multi-Links Flexible Robot- modeling and simulation", The 2nd IcETRAN Conference, Srebrno jezero, Serbia, Jun, 2015.
- [2015] **Mechanical design of robot head with ability to express emotional gestures**
- M. Vujović, I. Stevanović, **M. Tomić**, M. Miloš, A. Rodić, "Mechanical design of robot head with ability to express emotional gestures", The 2nd IcETRAN Conference, Srebrno jezero, Serbia, Jun, 2015.
- [2014] **Conversion of Captured Human Motion to the Humanoid ROMEO for Human Imitation**
- M. Tomic**, Ch. Chevallereau, "Conversion of Captured Human Motion to the Humanoid ROMEO for Human Imitation ", *The 1st IcETRAN Conference*, Vrnjačka Banja, Serbia, Jun, 2014.
- [2014] **Arms motion of a humanoid inspired by human motion**
- M. Tomic**, Ch. Vassallo, Ch. Chevallereau, A. Rodic, V. Potkonjak, "Arms motion of a humanoid inspired by human motion", *MESROB 2014*, EPFL Lausanne, Swiss, July, 2014.
- [2014] **Dual-Arm Robot Tracking of the Moving Target Using the Algorithm of Inverse Kinematics**
- M. Tomic**, D. Katić, "Dual-Arm Robot Tracking of the Moving Target Using the Algorithm of Inverse Kinematics ", *The 1st IcETRAN Conference*, Vrnjačka Banja, Serbia, Jun, 2014.

[2014] **The Circular motion of the Dual-Arms Robotics Manipulation Hands Inspired by Human Skill**

Marija Tomic: "The Circular motion of the Dual-Arms Robotics Manipulation Hands Inspired by Human Skill", 57th ETRAN Conference

[2012] **Connectionist-genetic based algorithm for positioning industrial manipulator**

Marija Tomic; Branko Miloradovic; Marija Jankovic:"Connectionist-genetic based algorithm for positioning industrial manipulator", 11th Symposium on Neural Network Applications in Electrical Engineering

[2012] **Human and Humanoid Motion - Distinguish Between Safe and Risky Mode of Locomotion**

V. Potkonjak, **M. Tomic**, A. Rodic, V. Antoska, " Human and Humanoid Motion - Distinguish Between Safe and Risky Mode of Locomotion", *10th International IFAC Symposium on Robot Control*, Dubrovnik, Croatia, September, 2012.

[2012] **The algorithm for trajectory tracking using a combination of Neural Network and Genetic Algorithm**

M. Tomić, B. Miloradović, M. Janković, "The algorithm for trajectory tracking using a combination of Neural Network and Genetic Algorithm", *11th Symposium on Neural Network Applications in Electrical Engineering*, Belgrade, Serbia, June 2012

[2012] **Solving inverse kinematics problem of ROBED03 manipulator using genetic algorithms**

Marija Tomic: "Solving inverse kinematics problem of ROBED03 manipulator using genetic algorithms", 56th ETRAN Conference

NETWORKS AND MEMBERSHIPS

Member of the ETF Robotics research group

Link: <http://robot.etf.rs>

Member of the France Alumni

Link: www.francealumni.fr

Member of the Centrale Nantes Alumni

Link: <https://website.ec-nantes.fr>

PROJECTS

- [01/12/2023 – 01/12/2024] **00123168/01-01: "Tradition and Innovation towards Circular Agriculture", funded by The United Nations Development Programme**
- [2020 – 2022] **ForNextCobot: "Mechanical Impedance Estimation and Planning for the Next Generation Collaborative Robots", project of the Science Fund of the Republic of Serbia**
- [2017 – 2021] **COST Action CA16116 "Wearable robots for augmentation, assistance or substitution of human motor functions (WearableRobots)" as a Management Committee member**
- [2018 – 2019] **„Establishing new tools to facilities new generation humanoid robot capabilities for collaborative human-robot object manipulation“, Institute "Jožef Štefan" in Ljubljana and the School of Electrical Engineering in Belgrade**
- [2011 – 2015] **TR-35003: "Research and Development of Ambient-Intelligent Service Robots with Anthropomorphic", project of the Ministry of Education, Science and Technological Development of the Republic of Serbia**
- [2014 – 2015] **HORIZON 2020 project, #Coordination support activity project „Researchers' night – FLIRT"**
- [2012 – 2014] **IZ74Z0_137361 / 1: "Creative Alliance in Robotics Research and Education Focused on Medical and Service Robotics", funded by the Swiss National Science Foundation**

HONOURS AND AWARDS

- [2023] **Award for the best paper presented in the Section of Robotics and Flexible Automation at the 8 th International Conference- IcETRAN 2023**
- [2021] **Award for the best paper presented in the Section of Robotics and Flexible Automation at the 8 th International Conference- IcETRAN 2021**
- [2012] **French Government Scholarship for bilateral doctoral studies in France**
- [2011] **The 1st prize at the 17th International Students Competition in Engineering – ICAMES 2011 – Istanbul**