PERSONAL INFORMATION   Jasmin Velagić

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Skype jvelagic

Gender Male | Date of birth 18/09/1970 | Nationality Bosna and Herzegovina

JOB POSITION   Full Professor with University of Sarajevo, Faculty of Electrical Engineering

EMPLOYMENT HISTORY

May 2019 -   **Dean of faculty**
University of Sarajevo – Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina,
http://www.etf.unsa.ba/

2013 -   **Full Professor**
University of Sarajevo – Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina.

2009-2013   **Associate Professor**
University of Sarajevo – Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina.

2006-2009   **Assistant Professor**
University of Sarajevo – Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina.

2001-2006   **Senior Assistant**
University of Sarajevo – Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina

1997-2001   **Teaching and Research Assistant**
University of Sarajevo – Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina

EDUCATIONAL BACKGROUND

2000-2005   **PhD in Electrical Engineering.**   EQF nivo 8
University of Sarajevo – Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina.
▪ Automation and robotics.

1995-1999   **MSc in Electrical Engineering**   EQF nivo 7
University of Zagreb, Faculty of Electrical Engineering and Computing.
▪ Automatic control of marine vessels.

1990-1995   **Dipl.ing. in Electrical Engineering**   EQF nivo 6
University of Zagreb, Faculty of Electrical Engineering and Computing.
▪ Automatic control systems.

PERSONAL SKILLS

Mother tongue(s)	Bosnian

Other language(s)

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
English				
C2	C2	C2	C2	C2

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Communication skills

▪ good communication skills gained through my experience as professor and assistant.

Organisational / managerial skills

▪ leadership (leader of many international and national research projects).

Computer skills

▪ good command of Java, C++, Matlab, ROS.

ADDITIONAL INFORMATION

Projects

- "**Guidance and Control of Marine Systems**", Ministry of Science and Tehnology, Croatia, 1997-1999 (role: researcher).
- "**RoboLab - Control of Underwater Lab**", Ministry of Science and Tehnology, Croatia, 2002-2004 (role : researcher).
- "**Autonomous Robots System for Improving Quality of Life**", Ministry of Foreign Affairs, Italia and Ministry of Foreign Affairs, Bosnia and Herzegovina, 2003-2005 (role: researcher).
- "**ThermalMapper – Thermal 3D Modeling of Indoor Environments for Saving Energy**", granted by European Commission represented by the Joint Call Secretariat (JCS) at the German Aerospace Center (DLR) (FP7 – SEE.ERA.NET PLUS), Participants: Jacobs University Bremen, Faculty of Electrical engineering in Sarajevo, Faculty of Electrical Engineering and Computing Zagreb, 2010-2013 (role: leader).
- "**TIRAMISU - Toolbox implementation for removal anti-personell mines, submunitions and uxo**", FP7: Cooperation: Security Research - CORDIS, (granted by European Commission), 2012-2016 (role: member of advisory board).
- "**Autonomous Wheelchair Mobile Robotic System**", (granted by the Ministry of education and science, Federation of Bosnia and Herzegovina), 2003-2004 (role: researcher).
- "**Autonomous robot system for improving of quality of life**", (granted by the Ministry of Science and Technology of the Italia and the Ministry of Science and Education of the Bosnia and Herzegovina), Project No. 6, 2003-2005 (role: researcher).
- "**Autonomous robot system for improving of quality of life**", (granted by the WUS (World University Service), Graz), Project No. 12/SA/03, 2003-2004 (role: researcher).
- "**Navigation of Mobile Robots in 2D Unstructured Environments**", (granted by the Ministry of education and science, Canton Sarajevo), Project No. 5, 2004-2005 (role: leader).
- "**Navigation and stabilization of laboratory helicopter model using soft computing methodologies**", (granted by the Cantonal Ministry of Education and Science of the Bosnia and Herzegovina), 2008-2009 (role: leader).
- "**Design of Remote-Control System and Intelligent Man-Robot Interface**", (granted by the Federal Ministry of Education and Science of the Bosnia and Herzegovina), 2009-2010 (role: leader).
- "**Modeling of 3D Thermal Indoor Environments Representation Based on Thermal Distribution for Saving Energy**", (granted by Ministry of Civil Affairs of Bosnia and Herzegovina), 2010-2011 (role: leader).
- "**Generation of 3D Thermal Environment Models Based on Fusion of 2D Thermal and 3D Laser Data**", (granted by the Federal Ministry of Education and Science of the Bosnia and Herzegovina), 2012-2013 (role: leader).

- "**Terrain Classification and Mine Detection Using 3D Thermal Environment Representations**", (granted by the Federal Ministry of Education and Science of the Bosnia and Herzegovina), 2013-2014 (role: leader).
- "**HOLBOS - Holonomous Reconfigurable Mobile Robot for Materils Handlling**", (granted by the Federal Ministry of Education and Science of the Bosnia and Herzegovina), 2013-2014 (role: leader).
- "**Remotely-Controlled, Mobile Forensic Platform for the Identification and Collection of CBRNE Materials**", (granted by Ministry of Civil Affairs of Bosnia and Herzegovina), 2015-2016 (role: leader).
- "**Advanced Controls Systems for Wind Turbines**", (granted by the Federal Ministry of Education and Science of the Bosnia and Herzegovina), 2016-2018 (role: leader).
- "**Terrain mobile robot platform with robotic manipulator based on shared autonomous control**", (granted by the Cantonal Ministry of Education and Science of the Bosnia and Herzegovina), 2016-2017 (role: leader)
- "**Multi-domain mobile 3D mApping and inspection toolbox for Cultural Heritage preservation**", (granted by Ministry of Civil Affairs of Bosnia and Herzegovina and European Commission), 2016-2017 (role: leader).
- "**Development of the Wind Energy Conversion Control System Based on FPGA Technology**", (granted by the Cantonal Ministry of Education and Science of the Bosnia and Herzegovina), 2017-2018 (role: leader).
- "**System for supervision and evaluation of the thermal efficiency for the buildings with aim to energy Saving**", Granted by Federal Fund for Environmental Protection, 2018-2019 (role: leader).
- "**Robust Control of electric generators in power production from renewable energy sources**", (granted by the Federal Ministry of Education and Science of the Bosnia and Herzegovina), 2020-2021 (role: leader).
- "**Optimising Design for Inspection**", EU COST project CA18203, 2019-2023 (role: leader of B&H team).
- **Multi-domain mobile 3D mapping and inspection toolbox for cultural heritage preservation (3DVMS)"**, (granted by the Cantonal Ministry of Education and Science of the Bosnia and Herzegovina), 2021-2022 (role: leader).
- "**Control methods of energy conversion from renewable sources in microgrids**", (granted by the Federal Ministry of Education and Science of the Bosnia and Herzegovina), 2021-2022 (role: leader).
- "**Artificial Intelligence Based Alzheimer's Disease Risk Prediction for Personalized Medicine**", (granted by Ministry of Civil Affairs of Bosnia and Herzegovina and European Commission), 2022-2023 (role: leader).
- "**Design optimization for aircraft component inspection**", (granted by Ministry of Civil Affairs of Bosnia and Herzegovina and European Commission), 2022-2023 (role: leader).
- "**ROBORIZON - Development of a robotics project within the framework of Horizon Europe**", Pathways to Innovation - Supporting Future Applicants in European Security Research, (granted by BMBF (Bundesministerium für Bildung und Forschung) Germany), 2022-2023 (leader of B&H team).
- "**Strengthening Research and Innovation Excellence in Autonomous Aerial Systems – AeroSTREAM**", EU HORIZON-WIDERA-2021-ACCESS-05 program, 2022-2025 (role:researcher).
- "**MARBLE-Joint Master on Maritime Robotics in Blue Economy**", INTERREG V-B Adriatic-Ionian ADRION Programme 2014-2020, 2022-2023 (role: researcher).

Publications, Supervisions and Reviews	

- **Publications:** 2 monographies, 1 scientific book, 3 book chapter, 10 refereed journal publications, 93 conference papers.
- **Number of citations:** 1408 (Google Scholar), 734 (Scopus), 350 (Web of Science Core Collection).
- **Supervisions completed:** 3 PhD, 60 MSc, 50 BSc.
- **Reviews:** journals: 50, international conference: 104, books: 3.

Technical Review	
	▪ Advanced Engineering Informatics, Elsevier Science.
	▪ Automatica, Elsevier Science.
	▪ Control Engineering Practice, Elsevier Science.
	▪ Automatika, Korema.
	▪ Robotics and Autonomous Systems, Elsevier Science.
	▪ Robotica, Cambridge University Press.
	▪ International Journal on Intelligent Automation and Soft Computing, TSI Press.
	▪ Journal of Intelligent and Fuzzy System, IOS Press.
	▪ Measurement, Elsevier Science.
	▪ Mechatronics, Elsevier Science.
	▪ Applied Ocean Research, Elsevier Science.
	▪ Journal of Dynamic Systems, Measurements and Control, ASME Press.
	▪ Transactions of the Institute of Measurement and Control, SAGE Publishing.
	▪ IEEE Transactions on Control System Technology, IEEE Press.
	▪ IEEE/ASME Transactions on Mechatronics, IEEE Press.
	▪ IEEE Computational Intelligence Magazine, IEEE Press.
	▪ IEEE Transactions on Industrial Electronics
	▪ IEEE Transactions on System, Man and Cybernetics - Part B.
	▪ IEEE Transactions on Cybernetics, IEEE Press.
	▪ IEEE Systems Journal, IEEE Press.
	▪ Journal of Intelligent and Robotic Systems, Springer Verlag.
	▪ Soft Computing, Springer Verlag.
	▪ Journal of Intelligent Manufacturing, Springer Verlag.
	▪ International Journal of Advanced Robotic Systems, SAGE Publishing.
	▪ International Journal of Robotics and Automation, ACTA Press.
	▪ Journal of Systems and Control Engineering, SAGE Publishing.
	▪ Journal of Computing and Information Technology, University of Zagreb.
	▪ Journal of Mechanical Engineering, University of Ljubljana.
	▪ Vehicle System Dynamics, Taylor and Francis.
	▪ ISA Transactions, Elsevier Science.

Member of Editorial Board	
	▪ IEEE SMC Soft Computing Technical Committee.
	▪ International Journal of Advanced Robotic Systems, SAGE Publishing.
	▪ IEEE International Symposium on Intelligent Control (ISIC 2012), October, 3-5, 2012, Dubrovnik, Croatia (Associate Editor).

Membership in Professional Societies	
	▪ Institute of Electrical and Electronics Engineers (IEEE).
	▪ IEEE Control System Society.
	▪ IEEE Robotics and Automation Society.
	▪ IEEE Systems, Man and Cybernetics Society.

Research Profiles	
	▪ ORCID: https://orcid.org/0000-0002-7563-891X
	▪ ResearchGate: https://www.researchgate.net/profile/ /profile/Jasmin_Velagic
	▪ Google scholar: https://scholar.google.com/citations?user=kqs5cSkAAAAJ&hl=en&oi=ao

Conference Organization	
	▪ General chair of the International Conference on Information, Communication and Automation Technologies (ICAT2013), 2013.
	▪ Program Chair of the International Conference on Information, Communication and Automation Technologies (ICAT2011), 2011.
	▪ Program Chair of the International Conference on Information, Communication and Automation Technologies (ICAT2009), 2009.

REFERENCES

Monographies and Scientific Books

- Velagić, J. (2012). Mobile Robotics, Štamparija Fojnica, Fojnica, ISBN: 978-9958-17-019-5.
- Velagić, J. (2010). Fuzzy Logic Control Systems, Faculty of Electrical Engineering, Sarajevo, ISBN: 978-9958-629-35-8.
- Velagić, J. (2008). Analysis and Control of Robot Manipulators, University Book, Mostar, ISBN: 978-9958-603-26-6.

Book Chapters

- Velagić, J., Kaknjo, A., Dautović, F., Hujdur, M. & Osmić, N. (2013). "Design and Physical Implementation of Holonomous Mobile Robot - Holbos," in book: Interdisciplinary Mechatronics: Research Development (Eds. M. Habib & J. P. Davim), Wiley, pp. 423 - 449, ISBN: 978-1-84821-418-7.
- Velagić, J., Osmić, N. & Lačević, B. (2010). "Design of Neural Network Mobile Robot Motion Controller," in book: New Trends in Technologies, I-Tech, Vienna, pp. 187-200, ISBN 978-953-7619-62-6.
- Velagić, J., Lačević B. & Osmić, N. (2008). "Nonlinear Motion Control of Mobile Robot Dynamic Model," in book: Mobile Robots Motion Planning, New Challenges, Advanced Robotic System International, Vienna, pp. 531-552, ISBN 978-3-902613-35-6.

Refereed Journal Publications

- Osmanović, A., Uzunović, T., Šabanović, A. & Velagić, J. (2021). "**Disturbance-Observer-Based Control of DFIG in Island Mode for Microgrid Applications,** " *IEEE Access*, Vol. 9, pp. 149153-149163 (IF JCR 3.476, Q2).
- Balta, H., Velagić, J., Beglerović, H., De Cubber, G. & Siciliano, B. (2020). "**3D Registration and Integrated Segmentation Framework for Heterogeneous Unmanned Robotic Systems**," *Remote Sensing*, Vol. 12, No. 10, pp. 1-40, (IF JCR 5.349, Q1).
- Zelenika, S., Hadas, Z., Bader, S., Becker, T., Guljušić, P., Hlinka, J., Velagić, J. & Vrcan, Z. (2020). "**Energy harvesting technologies for structural health monitoring of airplane components—a review,**" *Sensors*, Vol. 20, No. 22, pp. 6685-6742, (IF JCR 3.847, Q1).
- Velagić, J., Vuković, L. & Ibrahimović, B. (2020). "**Mobile Robot Motion Framework Based on Enhanced Robust Panel Method**," *International Journal of Control, Automation, and Systems*, Springer, Germany, Vol. 18, No. 5, pp. 1264-1276 (IF JCR 2.964, Q2).
- Borrmann, D., Nüchter, A., Dakulović, M., Maurović, I., Petrović, I., Osmanković, D. & Velagić, J. (2014). "**A Mobile Robot Based System for Fully Automated Thermal 3D Mapping**," *Advanced Engineering Informatics*, Elsevier Science Ltd, Oxford, Vol. 28, No. 4, pp. 425-440, ISSN: 1474-0346 (IF JCR 7.865, Q1).
- Velagić, J. & Osmić, N. (2013). "**Fuzzy-Genetic Identification and Control Structures for Nonlinear Helicopter Model**," *Journal of Intelligent Automation and Soft-Computing*, Taylor & Francis, UK, Vol. 19, No. 1, pp. 51-68, ISSN: 1079-8587 (IF JCR 3.401, Q2).
- Lačević, B. & Velagić, J. (2011). "**Evolutionary Design of Fuzzy Logic Based Position Controller for Mobile Robot**," *Journal of Intelligent and Robotic Systems*, Springer, Netherland, Vol. 63, No. 3-4, pp. 595-614, ISSN: 0921-0296 (IF JCR 3.129, Q2).
- Velagić, J., Lačević, B. and Peruničić, B. (2006). "**A 3-Level Autonomous Mobile Robot Navigation System Designed by Using Reasoning/Search Approaches**", *Robotics and Autonomous Systems*, Elsevier Science B.V., Amsterdam, Vol. 54, No. 12, pp. 989-1004, ISSN: 0921-8890 (IF JCR 3.7, Q2).
- Velagić, J., Vukić, Z. and Omerić, E. (2003). "**Adaptive Fuzzy Ship Autopilot for Track-Keeping**", *Control Engineering Practice*, Elsevier Science Ltd, Oxford, Vol 11. No.4, pp. 433-443, ISBN: 0967-0661 (IF JCR 4.057, Q2).
- Velagić, J., Huseinbegović, S. & Osmić, N. (2008). "**The Improvement of Telerobotic System Behavior in Contact with Remote Environment by Extension of an Impedance Controller**", *International Journal of Online Engineering*, Vol. 4, No. 4, pp. 39-44, ISSN: 1861-2121.
- Velagić, J., Osmić, N. & Lačević, B. (2008). "**Neural Network Controller for Mobile Robot Motion Control**," *International Journal of Intelligent Systems and Technologies*, Vol. 3, No.3, pp. 127-132, ISSN: 2070-3899.
- Velagić, J. (2008). "**Design of Smith-like Predictive Controller with Communication Delay Adaptation**," *International Journal of Intelligent Systems and Technologies*, Vol. 3, No. 4, pp. 215-219, ISSN: 2070-3899.
- Hebibović, M., Lačević, B., Velagić, J., Alagić, S. & Kulenović, I. (2004). "**Computer Simulation and Mathematical Model of Blood Glucose Behaviour**", *Medical Archive* (MedArh), Vol. 58, No. 2., pp. 122-124, ISSN:0350-199 X.

International Conferences

- Velagić, J., Klovo, V. and Lačević, H. (2022). "**Semantic Visual Segmentation of a Mobile Robot Environment Using Deep Learning Model**," XXVIII International Conference on Information, Communication and Automation Technologies, June 16-18, Sarajevo, Bosnia&Herzegovina, pp. 1-8.
- Velagić, J. and Balta, H. (2022). "**3D UAV Registration of Large Scale Environment Using Structure From Motion Based Approach**," XXVIII International Conference on Information, Communication and Automation Technologies, June 16-18, Sarajevo, Bosnia&Herzegovina, pp. 1-7.
- Akagić, A., Krivić, S., Dizdar, H. and Velagić, J. (2022). "**Computer Vision with 3D Point Cloud Data: Methods, Datasets and Challenges**," XXVIII International Conference on Information, Communication and Automation Technologies, June 16-18, Sarajevo, Bosnia&Herzegovina, pp. 1-7.
- Velagić, J., Čivgin, A., Osmić, N. and Osmanović, A. (2022). "**System for Robust Detection of Pedestrians in Dynamic Environments Based on 3D Range Data**," IEEE Conference on Control, Decision, and Information Technologies, May 17-20, Istanbul, Turkey, pp. 1-6.
- Velagić, J., Osmić, N., Klovo, V. and Lačević, H. (2022). "**Design of LQR Controller for 3D Trajectory Tracking of Octocopter Unmanned Aerial Vehicle**," IEEE International Conference on Control, Decision, and Information Technologies, May 17-20, Istanbul, Turkey, pp. 1-6.
- Velagić, J., Kovač, I., Panjević, A. and Osmanović, A. (2021). "**Design and Control of Two-Wheeled and Self-Balancing Mobile Robot**," International Symposium ELMAR, Sep. 13-15, Zadar, pp. 77-82.
- Omeragić, T. and Velagić, J. (2020). "**Tracking of Moving Object Based on Extended Kalman Filter**," International Symposium ELMAR, September 14-15, Zadar, Croatia, pp. 137-140.
- Velagić, J., Osmanović, A., Koluh, D. and Karzić A. (2020). "**Adaptive Control of Hard Disk Drive Servo System**," International Symposium ELMAR, September 14-15, Zadar, Croatia, pp. 91-96.
- Pozderac, T., Velagić, J. and Osmanković, D. (2019). "**3D Mapping Based on Fusion of 2D Laser and IMU Data Acquired by Unmanned Aerial Vehicle**," 6th IEEE International Conference on Control, Decision and Information Technologies (CoDIT), April 23-26, Paris, France.
- Ražanica, E., Hamzić, A., Osmanković, D. & Velagić, J. and (2019). "**Design of Radiometric Thermography System for Object Recognition**," 6th IEEE International Conference on Control, Decision and Information Technologies (CoDIT), April 23-26, Paris, France.
- Osmanović, A., Mašić, Š. & Velagić, J. (2019). "**Decoupled Power Control of SEIG-WECS System Using Nonlinear Flatness-Based Controller**," IEEE International Electric Machines and Drives Conference (IEMDC), May 12-15, San Diego, USA.
- Balta, H., Velagić, J., De Cubber, G. & Siciliano, B. (2019). "**Semi-Automated 3D Registration for Heterogeneous Unmanned Robots Based on Scale Invariant Method**," IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR), September, 2-4, Würzburg, Germany, to appear.
- Živojević, D. & Velagić, J. (2019). "**Path Planning for Mobile Robot using Dubins-curve based RRT Algorithm with Differential Constraints**," 61th International Symposium ELMAR-2019, September 23-25, Zadar, Croatia, pp. 139-142.
- Alagić, E, Velagić, J. & Osmanović, A. (2019). "**Design of Mobile Robot Motion Framework based on Modified Vector Field Histogram**," 61th International Symposium ELMAR-2019, September 23-25, Zadar, Croatia, pp. 135-138.
- Balta, H., Velagić, J., Bosschaerts, W., De Cubber, G. & Siciliano, B. (2018). "**Fast Iterative 3D Mapping for Large-Scale Outdoor Environments with Local Minima Escape Mechanism**," 12th IFAC International Symposium on Robot Control (SYROCO), August 27-30, Budapest, Hungary, pp. 298-305.
- Balta, H., Velagić, J., Bosschaerts, W., De Cubber, G. & Siciliano, B. (2018). "**Fast Statistical Outlier Removal Based Method for Large 3D Point Clouds of Outdoor Environments**," 12th IFAC International Symposium on Robot Control (SYROCO), August 27-30, Budapest, Hungary, pp. 348-353.
- Osmanović, A., Velagić J. & Mašić, Š. (2018). "**Nonlinear Flatness-Based Decoupled Power Control of DFIG Wind Turbine System**," 16th IEEE International Conference on Industrial Informatics (INDIN), July 18-20, Porto, Portugal, pp. 686 - 691.
- Velagić J., Osmić, N., Puščul, B. & Krilašević, S. (2018). "**Identification, Model Validation and Control of an Octorotor Unmanned Aerial Vehicle**," 16th IEEE International Conference on Industrial Informatics (INDIN), July 18-20, Porto, Portugal, pp. 381 - 387.
- Kasić, A., Velagić J. & Osmanović, A. (2018). "**Design of NMPC-Based Framework for Mobile Robot Motion in Unstructured Environments**"," 60th International Symposium ELMAR-2018, September 16-19, Zadar, Croatia, pp. 183 – 186.
- Jakubović, A. & Velagić, J. (2018). "**Image Feature Matching and Object Detection using Brute-Force Matchers**," 60th International Symposium ELMAR-2018, September 16-19, Zadar, Croatia, pp. 83 - 86.
- Hadrović, E., Osmanković, D. and Velagić, J. "**Aerial Image Mosaicing Approach Based on Feature Matching**," 59th International Symposium ELMAR-2017, September 18-20, Zadar, Croatia, pp. 177 - 180.

- Osmić, E. and Velagić, J. (2017). "**Design of a Simple Service Oriented Supervisory Control and Data Acquisition System**," 59th International Symposium ELMAR-2017, September 18-20, Zadar, Croatia, pp. 245 - 248.
- Velagić, J. and Hrusto, A. (2017). "**Design of Coupled Disturbance Observers for Nonlinear Half-Car Active Suspension System**," IEEE International Conference on Advanced Intelligent Mechatronics (AIM 2017), July 3-7, 2017, Munich, Germany, pp. 547 - 552.
- Lapandić, Dž., Velagić, J. and Balta, H. (2017). "**Framework for Automated Reconstruction of 3D Model from Multiple 2D Aerial Images**," 59th International Symposium ELMAR-2017, September 18-20, Zadar, Croatia, pp. 173 - 176.
- Osmanović, A. and Velagić, J. (2016). "**Nonlinear MPC-based Approach for Motion Control of Wheeled Mobile Robot in Dynamic Environment**," IASTED International Conference on Intelligent Systems and Robotics (ISAR 2016), October 6-8, Zurich, Switzerland, pp. 160-167.
- Jabandžić, I. and Velagić, J. (2016). "**Particle Swarm Optimization-Based Method for Navigation of Mobile Robot in Unstructured Static and Time-Varying Environments**," 3rd Conference on Control and Fault-Tolerant Systems (SysTol), September 7-9, Barcelona, Spain, pp. 59-66.
- Ibrahimović, B. and Velagić, J. (2016). "**Modified Robust Panel Method for Mobile Robot Path Planning in Partially Unknown Static and Dynamic Environments**," 3rd Conference on Control and Fault-Tolerant Systems (SysTol), September 7-9, Barcelona, Spain, pp. 51-58.
- Islamović, B. & Velagić, J. (2015). "**Flatness Based Control of Nonlinear Half Car Suspension System**," 23th Mediterranean Conference on Control ane Automation (MED 2015), June 16-19, Torremolinos, Spain, pp. 94-101.
- Trivun, D., Šalaka, E., Osmanković, D. & Velagić, J. (2015). "**Active SLAM-Based Algorithm for Autonomous Exploration with Mobile Robot**," IEEE International Conference on Industrial Technology (ICIT 2015), March 17-19, Seville, Spain, pp. 74-79.
- Velagić, J. & Kadrić, M. (2015). "**Multiple Switching Model Predictive Control of Variable-Speed Horizontal Wind Turbine**," IEEE International Conference on Industrial Technology (ICIT 2015), March 17-19, Seville, Spain, pp. 338-344.
- Osmanković, D. & Velagić, J. (2015). "**Approximative Iso-values Estimation in the Marching Cubes based 3D Thermal Model Reconstruction of Indoor Environments,**" IEEE International Conference on Industrial Technology (ICIT 2015), March 17-19, Seville, Spain, pp. 1644-1650.
- Velagić, J. and Šabić, B. (2014). "**Design, Implementation and Experimental Validation of Explicit MPC in Programmable Logic Controller**," IEEE International Symposium on Industrial Electronics (ISIE 2014), June 1-4, Istanbul, Turkey, pp. 93-98.
- Velagić, J., Delimustafić, D. and Osmanković, D. (2014). "**Mobile Robot Navigation System Based on Probabilistic Road Map (PRM) with Halton Sampling of Configuration Space**," IEEE International Symposium on Industrial Electronics (ISIE 2014), June 1-4, Istanbul, Turkey, pp. 1227-1232.
- Lutvica, K., Velagić, J., Kadić, N. and Osmić, N. (2014). "**Remote Path Planning and Motion Control of Mobile Robot within Indoor Maze Environment**," 2014 IEEE Multi-conference on Systems and Control (MSC 2014), October 8-10, Antibes, France, pp. 1596-1601.
- Krivić, S., Mrzić, A., Velagić, J. & Osmić, N. (2013). "**Optimization Based Algorithm for Correction of Systematic Odometry Errors of Mobile Robot**," Asian Control Conference (ASCC 2013), June 23-26, Istanbul, Turkey, paper No. 462.
- Dragolj, E., Velagić, J. & Osmić, N. (2013). "**Modelling of Nonlinear Helicopter Model and Loopshaping based Controller Synthesis**," The 39th Annual Conference of the IEEE Industrial Electronics Society (IECON 2013), November 10-13, Vienna, Austria, pp. 3601-3606.
- Velagić, J., Kaknjo, A., Hujdur, M., Dautović, F. & Osmić, N. (2013). "**Localization of Holonomous Mobile Robot HOLBOS Using Extended Kalman Filter (EKF) and Robotic Vision**," The 39th Annual Conference of the IEEE Industrial Electronics Society (IECON 2013), November 10-13, Viena, Austria, pp. 4178-4183.
- Osmanković, D., Supić, H. & Velagić, J. (2013). "**Performance and Quality Assessment of R-tree Based Nearest Neighbour Search in the Scalar Field Mapping Technique**," The 39th Annual Conference of the IEEE Industrial Electronics Society (IECON 2013), November 10-13, Viena, Austria, pp. 2453-2457.
- Osmanković, D. & Velagić, J. (2013). "**Detecting Heat Sources and Heat Leaks from 3D Thermal Model of Indoor Environment**," International Conference on Information, Communication and Automation Technologies, October 29 - November 1, Sarajevo, Bosnia and Herzegovina, Paper No. 51.
- Osmanković, D. & Velagić, J. (2013). "**Gradient based adaptive trajectory tracking control for mobile robots**," International Conference on Information, Communication and Automation Technologies, October 29 - November 1, Sarajevo, Bosnia and Herzegovina, Paper No. 60.
- Osmanković, D. & Velagić, J. (2012). "**Reconstructing the 3D Model of Indoor Environment from Unorganized Data Set Aquired by 3D Laser Scans and Thermal Imaging Camera**," IEEE Multi-Conference on Systems and Control (MSC 2012), IEEE International Symposium on Intelligent Control (ISIC 2012), October, 3-5, Dubrovnik, Croatia, pp. 13-18.

- Borrmann, D., Nüechter, A., Đakulović, M., Maurović, I., Petrović, I., Osmanković, D. & Velagić, J. (2012). "**The Project ThermalMapper - Thermal 3D Mapping of Indoor Environments for Saving Energy**," International IFAC Symposium on Robot Control (Syroco 2012), September 5-7, Dubrovnik, Croatia, pp. 31-38.

- Osmanković, D. & Velagić, J. (2012). "**Increasing the Precision of Reconstructed 3D Model of Indoor Robot Environment by Elimination of Problematic Points**," International IFAC Symposium on Robot Control (Syroco 2012), September 5-7, Dubrovnik, Croatia, pp. 593-597.

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TEACHING ACTIVITIES

Undergraduate courses:

- Actuators
- Mechatronics

Graduate courses:

- Networked Control Systems
- Mobile Robotics
- Cognitive Robotics

  Doctoral study:
- Multivariable Control Systems
- Adaptive and Robust Control

RESEARCH ACTIVITIES

Current Fields of Interests

- Mechatronics and robotics
- Heterogenous mobile robot systems
- Mobile robot path planning and control
- Cognitive robotics and robot interaction
- Adaptive and robust control
- Deep learning and intelligent control
- Networked control systems