**Biography (curriculum vitae)**



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# Dr. Vladimir Kvrgic has graduated in Mechanical Engineering from the University of Belgrade in 1981 with a special focus on control systems, robotics and machine tools. For his research on “Computing of the Sub-Optimal Grasping Forces for Manipulation of a Rough Object by Multifingered Robot Hand” he received his M.Sc. degree in Electrical Engineering from the University of Belgrade in 1991. For his thesis “The Development of an Intelligent System for the Control and Programming of Industrial Robots” he received his Ph.D. degree in Mechanical Engineering from the University of Belgrade in 1999.

# His present research activities are the development of a new algorithm for the robot forward dynamics needed for the robot simulation and algorithms for increasing the accuracy of the robots and the machine tools. His research interests are also control, programming and design of the robots and machine tools and multifingered robot hands.

# From 2017 he is working in the Robotics Centre of the Mihajlo Pupin Institute.

From 2007 till 2016 he was a General Manager of the Lola institute where he was also a Program Officer of the projects “A Control Algorithm for a Vertical 5-Axis Turning Centre“ and „Development of Devices for Pilot Training and Dynamic Simulation of modern Fighter Planes Flight: 3DoF Centrifuge and 4DoF Spatial Disorientation Trainer.“ Thereafter he was working as a senior scientific associate.

From 2000 till 2007 he was given the post of the General Manager of the IRL Machine Tool Factory where he was managing the development of the new Horizontal Milling and Boring machines, Vertical Turning Centres and a New 3-DoF Spatial Parallel Mechanism for Milling Machines with Long X Travel.

In 1994 he was given the post of the General Manager of the Lola Robotics Factory where he led the development and production of the Industrial Robots and automatic lines and machine for candy and pharmaceutical industry.

In 1981 he joined the ILR Machine Tool Factory in Belgrade to develop machine tools and industrial robots where he was a Designer and a Head of the Development Department. From 1991 till 1994 he was a Head of the Robotics Department of the Lola Institute, where he led the development of the Robot Controller.

He is author of more than 100 scientific papers. Some of them are

1. **V. Kvrgic**, A. Ribic, Z. Dimic, S. Zivanović, Z. Dodevska, Equivalent Geometric Errors of Rotary Axes and Novel Algorithm for Geometric Errors Compensation in a Nonorthogonal Five-Axis Machine Tool, *CIRP Journal of Manufacturing Science and Technology*, 37 (2022) 477-488, <https://doi.org/10.1016/j.cirpj.2022.03.001>.
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11. **V. Kvrgić**, Z. Dimic, V. Cvijanovic, D. Ilic, M. Bucan, A Control Algorithm for a Vertical 5-Axis Turning Centre, *International Journal of Advanced Manufacturing Technology*, 61(5-8) (2012) 569-584.
12. M. Glavonjic, D. Milutinovic, S. Zivanovic, Z. Dimic, **V.** **Kvrgic**, Desktop 3-Axis Parallel Kinematic Milling Machine, *The International Journal of Advanced Manufacturing Technology*, 46(1-4) (2010) 51-60.
13. Z. Dimic, D. Milutinovic, S. Zivanovic, **V. Kvrgic**, Virtual Environment in Control and Programming System for Reconfigurable Machine Robot, *Technical Gazette*, 23(6) (2016) 1821-1829.
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**Engineering projects**

1. Double column vertical lathe DVS 40 CO, ILR Belgrade, 2006 - 2007.
2. Single column vertical lathe JVS 20 CO, ILR Belgrade, 2006-2007.
3. Single column vertical lathe JVS 24 CO, ILR Belgrade, 2006-2007.
4. Horizontal boring and milling machine – platen type, BG 130 CO, ILR Belgrade, 2005.
5. Three-axis vertical milling machine based on parallel kinematics mechanism - Lola robot factory - ILR Belgrade, 2005.
6. Single column vertical lathe JVS 16 CO, ILR Belgrade, 2004.
7. Horizontal boring and milling machine – table type, BH 110 CNC, ILR Belgrade, 2004.
8. Horizontal boring and milling machine – planer or T-bed type, HBG 130 CO, ILR Belgrade, 2003.
9. Single column vertical lathe JVS 18 CO, ILR Belgrade, 2003.
10. Robot controllers Lola RC 1, Lola RC 2, and Lola RC 3, Lola institute and Lola robot factory - ILR Belgrade, 1991 - 2000.
11. Machines for wrapping and packaging in pharmaceutical industry, Lola robot factory - ILR Belgrade, 1997.
12. Three-axis gantry robot, Lola robot factory - ILR Belgrade, 1995.
13. Two-axis robot with two four-bar mechanisms for manipulation in candy industry, Lola robot factory - ILR Belgrade, 1995.
14. Line for packaging with robots in candy industry, Lola robot factory - ILR Belgrade, 1995.
15. Algorithms and software for robot movements control - development, programming, tests and integration of the algorithms in industrial robot language L-IRL, Lola institute and Lola robot factory - ILR Belgrade, 1991 - 1997.
16. Industrial robot with six rotational axes - Lola 15, Lola robot factory - ILR Belgrade, 1991.
17. Manipulators for car industry and for special-purpose machine tools ILR Belgrade, 1981 - 1990.
18. Systems of transport and manipulation in transfer and flexible production lines, ILR Belgrade, 1981 - 1990.