



GOSTUJUĆE PREDAVANJE

Autonomous trajectory generation for robot-aided visual quality inspection

Dr. Andrej Gams

U sklopu Naučno-Istraživačkog Projekta "AUPFAMAT" u okviru naučne i tehnološke saradnje između BiH i Republike Slovenije organizuje se pozivno predavanje Dr. Andreja Gamsa.

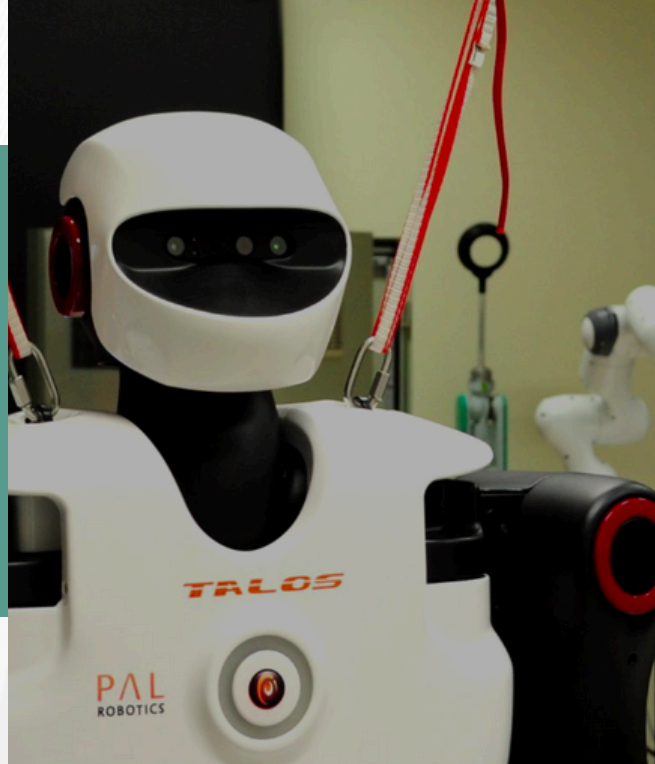
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ABSTRACT

Robot-aided visual quality inspection requires the robot to move either the object of inspection around the camera, or the camera around the object of inspection. The motion of the robot needs to be optimised so that it does not make a bottleneck in the production, but also so that the resulting visual feedback is of sufficient quality. In the talk I will present 2 solutions for determining and optimizing trajectories of robot-aided visual quality inspection. In the first, where the camera motion is continuous, it needs to be such that the image is not blurred. We applied different learning methods to achieve optimized speed of robot motion based on image quality. In the second, the camera needs to be moved to many different locations, and there is simply not enough time. Thus, we devised a method that plans the motion between goal-directed positions. The latter are determined based on predicted errors, where production parameters are used as the input for the prediction.

BIOGRAFIJA

Dr. Andrej Gams is a senior researcher and head of the Humanoid and Cognitive Robotics Laboratory at Jožef Stefan Institute in Ljubljana, Slovenia. He is also an associate professor at the Jožef Stefan International Postgraduate School. He received the Diploma degree in electrical engineering in 2004, and a Ph.D. degree in robotics from the University of Ljubljana, Slovenia, in 2009. He was previously a Postdoctoral Researcher with SCIEX NMS-CH fellowship at the Biorobotics Laboratory, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, during 2012–13, where he also did a part of his Ph.D. research in 2007–08. He was a visiting researcher at the ATR Computational Neuroscience Laboratories in the summers of 2009 and 2014. His research interest include humanoid robotics, robot manipulation including for deformable objects, transfer learning and robot learning from practical perspectives, the latter when applied for various industrial applications.



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