Editor's Letter

Dear Authors, Readers,

Nowadays robots are widely applied in different areas, such as production, manufacturing, agriculture, businesses, and even everyday life. Robotics became frequent in automotive and electronic industries, medical and life sciences. Not only it saves labor and production costs, but also, improves the production cycle, and raises quality.

Modern robotics exists in many forms: industrial robots, autonomous robots, even social ones. The size of robots has a very broad range from robots for micrometric size object manipulation to the devices able to carry payloads of few tones. Their applications cover positioning of the tool, delivery of instruments, and provides technology bypassing dangerous and uncomfortable technologies without human participation. The greatest challenges in robotics spread into areas of grasping, control, decision making, and human-robot cooperation. Over the last decade, there are grown a significant number of research on robotic grasping and manipulation of objects with unstable shapes, like cables, fabric, or clothes.

A number of researches focused on autonomous robots, especially for efficient and reliable navigation in the industrial and natural environment. A big issue in navigation consists of collaboration with humans and avoidance of any type of collisions; plan a feasible path and interactive response to the environment brings the greatest income to robotic navigation. Interaction between robot and external world performed using various type of sensors. Sensors provide information for robot path control, grasping and manipulating forces, deformation of the object, and adjusts accurate object positioning. Modern robot control faces a big need for complex robot system processing; therefore, sensor signals fusion became a hot issue in recent research.

Sensor fusion provides data for artificial intelligence and machine learning realizing the great potential of these technologies and creates a world of synthetic robot ontology. It becomes one of the most interesting and widely researched areas of robotics. The greatest sensing technology, which provides huge amounts of information about the environment, is computer vision. Recently, visual object recognition brought mostly sophisticated tasks into the computer vision area. Implementing object image libraries, transparency and hidden edges of the object leads to the daily life of robotic vision systems, which requires new research and new recognition concepts.

Military and rescue robots act in environments, dangerous for humans. Rescue robots can help with finding, signalizing, monitoring the environment, and in some cases – rescuing humans.

Micrometric size robotics is an emerging area for microstructure analysis, instrumentation, and measurement device delivery in the place. This kind of robot has a high implementation in the area of electronic production and faces great challenges in precision drives, robot structure stiffness, and fast control response.

The journal ready to collect and publish outstanding papers related to robotics and robotic technology in all its flavors to foster new research and challenging frontiers of science.

Editor in Chief
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