Editorial

Editorial for Special Issue “Automation and Robotics: Latest Achievements, Challenges and Prospects”

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The determination of this Special Issue topic in the field of automation and robotics was well received by the community of scientists and researchers. Their successful response arose from the universality of the challenges and prospects in the field of robotics that are solved on the basis of well-known concepts at various research workplaces. The positive response to accept the challenge to compare and disseminate the latest developments within the area resonated and has been confirmed, to some extent surprisingly, in a broad range of research areas. On the other side, the aims of all papers are closely related, mainly in terms of reducing the production preparation time, and accurate identification in space, especially relating to machine vision and imaging.

The most numerous group of published articles is related to the field of camera systems, image recognition, 3D virtual models and robot trajectory planning [1–4]. Their contributions are interconnected within the field of the latest machine vision prospects.

The second strongest group of published papers enhances the field of mechanization, automation and robotics focused on production technologies and mechanical engineering. The authors of this group of papers [5–9] combine results oriented to the design of the mechanical parts with the support of 3D adjustable simulations and other objects designed for kinematic data adaptation and positioning of industrial robots. The authors of these papers deal with advanced theoretical topics related to the statics and dynamics of action elements of robotic systems [10–13].

The thematic range of this Special Issue also includes works focused on the field of robotics and automation methods and applications in a non-engineering environment. The studies focus on automating unusual environments, such as underground mining, machining technologies in engineering or inverse data kinematics on non-standard modular robotic arms. These three specific groups of contributions are particularly enriching due to their originality [7,14–16]. This is demonstrated, e.g., in [7] which also mentions a patent application related to the research activity described in the contribution.

To conclude, the call for researchers and scientists working on the selected topic has been positively accepted. Various research teams contributed and presented their research facilities at a high professional level, offering their results. They presented original results related to the latest production methods and the implementation of the new generation tools. All authors worked with the newest approaches and methods in designing these automated components. Components implemented at automated and robotic workplaces are designed for new applications and future technologies and related generations.

Thus, the main goal of this Special Issue on automation and robotics has been fulfilled. The presented contributions have the potential to contribute to reducing the costs of production processes, and to support tools for the simulation and design of key elements and components to achieve exceptional quality and reliability in the production sphere.

The team of editors thanks all the authors whose contributions were accepted, but also those whose contributions were not included in this SI, which were not accepted based on a lack of scientific rigor, but mainly due to a weaker coupling to the SI focus.

At the end of this Editorial, we would like to thank all the authors who explained and implemented the comments and suggestions of the reviewers and editors with patience and thus contributed to raising the level in their field. We would also like to thank all the reviewers who have taken on this highly responsible role and deserve a place of honor in this Special Issue. Last but not least, our special thanks also go to every member of the MDPI *Applied Sciences* Editorial Team, who were our right hands and with whom this SI was created extremely smoothly, especially the very helpful, patient, communicative and flexible Ms. Maura Pei. Thank you so much for your cooperation.

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