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Robotics Meets AI & 5G — The Future is Now!

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Robotics research has advanced in the last two decades through an intensive collaboration with other disciplines and research communities. Multi-disciplinary approaches are more successful in addressing the combined issues of cognition (perception, awareness, and mental models), and physical attributes (safety, dependability, and dexterity) in the world of robotics. Previously separated from humans behind a fence, the new advanced robots (or cobots) are sharing our workspace and collaborating with us. Increasingly sophisticated built-in sensors enable them to see and feel the presence of humans and avoid accidental contact. The perception of robotics technology is improving, as we experience more ways it can positively affect our lives. In particular, the social and medical benefits of robots are starting to get more attention. In this scenario, the terms artificial intelligence (AI) and robotics are liberally used, and frequently interchanged today. However, the physical nature of a robotic system distinguishes it from the pure abstraction of AI. We are experiencing a transition from Information and Communication Technology (ICT) to InterAction Technology (IAT). The fifth generation of wireless technology (5G) will pave the way for a new generation of robots, some free to roam controlled via wireless rather than wired communication links while exploiting the vast computing and data storage resources of the cloud. Armed with these capabilities, robots can be controlled dynamically in real time and be connected to people and machines locally and globally. In the near future, 5G will fully enable applications with minimal latency such as “factory of the future”, “remote surgical training” and many others that were previously beyond the capabilities of both cellular and robotics technologies.

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Organizers

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