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Sommario/riassunto

Quantum robotics is an emerging engineering and scientific research discipline that explores the application of quantum mechanics, quantum computing, quantum algorithms, and related fields to robotics. This work broadly surveys advances in our scientific understanding and engineering of quantum mechanisms and how these developments are expected to impact the technical capability for robots to sense, plan, learn, and act in a dynamic environment. It also discusses the new technological potential that quantum approaches

may unlock for sensing and control, especially for exploring and manipulating quantum-scale environments. Finally, the work surveys the state of the art in current implementations, along with their benefits and limitations, and provides a roadmap for the future.