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Reflections on Some Issues in Robotic Communications

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Abstract: *Paper explores complex realm of communication systems involved in robotics. It addresses multifaceted challenges, including system design, data transmission methods, and integration of cognitive functions to enable effective interactions between robots and human operators. Particularly, it examines how communication protocols impact performance and efficiency in robotic systems, and highlights need for robust, secure communication channels to protect against interference and cyber threats. Paper provides a thorough examination of the intricate challenges involved in robotic communications, emphasizing the importance of developing sophisticated communication protocols and systems. Paper delves into various communication technologies such as wireless communication, vital for remote-controlled or autonomous robots. Inclusion of AI further complicates and enriches communication process, demanding sophisticated algorithms to process information and respond aptly to human commands or environments. Some issues addressed are; How can robotic communication systems be designed to ensure real-time responsiveness in varying environments? What are the implications of insufficient cybersecurity measures in robotic communication systems? In what ways can interdisciplinary collaboration enhance the development of robotic communication technologies? How does the integration of AI into robotic communication change the expectations for human-robot interaction? What are the ethical considerations we should keep in mind as robotic systems become more autonomous? Which sectors are underutilizing robotic communication technologies, and what potential benefits could arise from adoption? Insights gained from this analysis underline the necessity for interdisciplinary approaches in developing these sophisticated systems while maintaining scalability, reliability, and security in robotic communication. Overall, continued exploration and innovation in this field will pave the way for more advanced and integrated robotic solutions that benefit various sectors significantly.*

Keywords: Communication Protocols, Latency, Cognitive Functions and Robotic Communications

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