Machine learning enabled wearables for plants and humans at nano scale

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Abstract

Advancement in nanotechnology has made it possible to manufacture sensors, circuits and devices measuring only nano-meters in size. This development is creating an extraordinary opportunity to observe, interact, and optimize physical systems from the very bottom. Wireless communication and networking at nanoscale, however, faces new challenges not encountered in conventional sensor networks. For example, nanoscale antenna calls for wireless communication in the Terahertz band, which encounters new path loss d noise phenomena posing significant challenges for many target applications of such networking. Nanoscale computing and communication is a new and rapidly growing field of research promoting collaboration between wireless networking, nanotechnology, and other fundamental disciplines. However, the research is in its early stages to realize communication and networking at the nanoscale. Currently, there is no definitive standard that provides guidelines and regulation for nanoscale communication and networking. This motivates this proposal to shed light on and promote this area of research and foster.