

ZHAO and Yun ZHAO revised and finalized the paper.

Compliance with ethics guidelines

ZZhou TONG, Na LI, Huimin ZHANG, Quan ZHAO, Yun ZHAO, Junshuai SUN, and Guangyi LIU declare that they have no conflict of interest.

References

- Deng J, Huang Y, Li G, et al., 2022. Native intelligence for 6g mobile network: technical challenges, architecture and key features. *The Journal of China Universities of Posts and Telecommunications*, (1):27-40.
- Gang J, Friderikos V, 2019. Inter-tenant resource sharing and power allocation in 5g virtual networks. *IEEE Transactions on Vehicular Technology*, 68(8):7931-7943. <https://doi.org/10.1109/TVT.2019.2917426>
- Ji C, Bi M, Zhou Z, et al., 2021. Online bandwidth resources allocation algorithm for multi-tenancy pon based on deep reinforcement learning. *Optical Communication Technology*, 45(9):36-39.
- Kalil M, Al-Dweik A, Sharkh M, et al., 2017. A framework for joint wireless network virtualization and cloud radio access networks for next generation wireless networks. *IEEE Access*, 5(1):20814-20827.
- Lin M, Zhao Y, 2020. Artificial intelligence-empowered resource management for future wireless communications: A survey. *China Communications*, 17(3):58-77. <https://doi.org/10.23919/JCC.2020.03.006>
- Liu G, Li N, Deng J, et al., 2022. The solids 6g mobile network architecture:driving forces,features,and functional topology. *Science Direct*, (1):42-59.
- Luo Y, Shi Z, Zhou X, et al., 2014. Dynamic resource allocations based on q-learning for d2d communication in cellular networks. 2014 11th International Computer Conference on Wavelet Actiev Media Technology and Information Processing(ICCWAMTIP), p.385-388. <https://doi.org/10.1109/ICCWAMTIP.2014.7073432>
- Lv Y, Jia X, Lu Y, et al., 2021. A deep q-learning based resource allocation algorithm in indoor wireless networks. *Computer Engineering&Science*, 43(7):1250-1255.
- Ren Y, Sun Y, Peng M, 2021. Deep reinforcement learning based computation offloading in fog enabled industrial internet of things. *IEEE Transactions on Industrial Informatics*, 17(7):4978-4987. <https://doi.org/10.1109/TII.2020.3021024>
- Xu H, Tong Z, Shen H, et al., 2021. Dynamic communication and computation resource allocation algorithm for end-to-end slicing immobile networks. *Artificial Intelligence for Communications and Networks*, p.251-267.
- Zhang T, Wang X, Yang L, et al., 2021. A sfc deployment and computation resource allocation joint algorithm in mobile networks. *Journal of Beijing University of Posts and Telecommunications*, 44(1):7-13.
- Zhao Q, Grace D, Nihar A, et al., 2015. Using k-means clustering with transfer and q learning for spectrum, load and energy optimization in opportunistic mobile broadband networks. 2015 International Symposium on Wireless Communication Systems (ISWCS), p.116-120. <https://doi.org/10.1109/ISWCS.2015.7454310>