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REINFORCEMENT LEARNING FOR ROUTING AND RESOURCE ALLOCATION IN FANET: A REVIEW

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Routing and resource allocation are considered as the most critical challenges in modern communication networks, cloud computing and distributed systems. Traditional optimisation strategies fail to adjust in dynamic and uncertain environments. It motivates to adopt Reinforcement learning for resource allocation in FANETs. This paper reviews recent advancements in RL-based approaches for FANET routing and resource allocation, having a focus on developments from 2023 to 2025. The paper analyses major contributions in single agent and multi-agent RL, deep reinforcements and hybrid frameworks. These are integrated with RL with heuristic optimisation, while also identifying several limitations such as overhead in training, instability in convergence and many others. The paper concludes with future research directions focusing on edge intelligence, explainable RL and many more.