**Conclusion**

In this paper, we combine blockchain and DRL for the ECCO system in the VANET network, and jointly investigate access control and computation offloading. We consider a general VANET scenario where multiple vehicles can offload their tasks to an edge or cloud server for collaborative performance. Then, we designed a hierarchical distributed software-defined VANET (SDVs) framework based on the blockchain. First, to improve the security of task offloading, we propose an access control enabled by smart contracts and blockchain to manage vehicle access to prevent malicious offloading access. We then propose a new DRL-based offloading scheme to achieve the optimal offloading strategy for all vehicles in VANET. We use the extended DQN algorithm to formulate task offloading decisions, consensus mechanism decisions, and edge resource as well as bandwidth allocation as joint optimization problems to minimize the total offloading cost of computation latency, throughput and energy consumption. We conducted an experimental simulation to evaluate the effectiveness of the proposed scheme. The results show that, compared with other benchmark methods, our scheme provides high security for the ECCO system and achieves performance improvements with minimum offloading costs. In the future, we will consider designing light-weight blockchains so that the access control architecture is devised and arrayed directly at the edge side. It will hopefully support time-sensitive network management services for offloaded systems.