(Pt24) Research on Radar Target Tracking Algorithms for Complex Traffic Scenarios

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(Pt9) Abstract—**To address the security risks in vehicular network communication that current technologies cannot resolve, this paper proposes a multi-key data aggregation algorithm for the Internet of Vehicles (IoV). By adopting multi-key fully homomorphic encryption over rings, the algorithm ensures that data remains encrypted during transmission and aggregation, with encryption operations conducted over rings, thereby enhancing computational efficiency and decryption accuracy. This approach protects vehicle data in the IoV from unauthorized access by institutions or attackers and ensures the security and accuracy of the aggregation process. Throughout the data processing flow, multi-layer encryption and homomorphic operations further enhance data confidentiality and processing efficiency, providing effective technical support for IoV information security. This algorithm is suitable for IoV applications with high demands for data privacy and security.**

(Pt9) Keyword—**Internet of Vehicles; Multi-key; Data Aggregation; Homomorphic Operations; Data Security.**

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