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**Two reversible data hiding schemes for VQ-compressed images based on index coding**

**Abstract**

This study proposes two reversible data hiding (RDH) schemes for vector quantisation (VQ)-compressed images based on switching-tree coding (STC) and dynamic tree-coding scheme (DTCS). Most developed VQ-based RDH schemes produce non-legitimate codes as output. In order to preserve the legitimacy of the embedded VQ code, some schemes embed data into VQ indices by employing an index replacement mechanism and some other schemes perform embedding by adopting one of the possible ways during encoding each index when multiple ways are possible to encode the index. In the current research, two schemes are proposed based on the second mechanism. Outputted code of the proposed schemes is a legitimate STC/DTCS code and the conventional STC/DTCS decoder can decode it to the original VQ index table. The experimental results show that the proposed schemes are feasible and in comparison with some previous RDH schemes, the first one provides higher embedding capacity and the second one embeds a substantial amount of data while provides lower bit rate than most the previous schemes. In addition, the embedding-efficiency of both proposed schemes is higher than that of the previous schemes.