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Semantic Based Image Indexing using Deep Learning

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Abstract: *This paper introduces a semantic-based image indexing system utilizing a custom Convolutional Neural Network (CNN) for feature extraction and semantic embedding techniques for understanding image content. Traditional image indexing methods rely heavily on low-level visual features, often resulting in inaccurate or irrelevant results. By leveraging deep learning, our proposed system bridges this gap, allowing high-level semantic features to guide indexing and retrieval. Tested on the CIFAR-10 dataset, our approach demonstrates a significant improvement in precision, recall, and overall retrieval performance, showcasing its potential in real-world applications.*

Keywords: Image indexing, semantic search, CIFAR-10, deep learning, convolutional neural networks