IJARSCT



International Journal of Advanced Research in Science, Communication and Technology

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 5, Issue 5, May 2025



Image Classification on Fashion MNIST Dataset Using Deep Learning Approaches

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Abstract: This research paper explores image classification using the Fashion MNIST dataset—a benchmark dataset consisting of grayscale images of fashion products. Using deep learning techniques, particularly Convolutional Neural Networks (CNNs), the paper demonstrates the effectiveness of neural networks in accurately classifying fashion items into ten categories. The model achieved high accuracy, outperforming traditional machine learning algorithms and showcasing the power of deep learning for image-based tasks.

Keywords: Image Classification, Fashion MNIST, Deep Learning, Convolutional Neural Networks (CNN), Computer Vision,28x28 Grayscale Images,10 Clothing Categories, NumPy Arrays, Benchmark Dataset, Preprocessing, CNN Architecture, Activation Functions, Optimization ,Evaluation Metrics

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