

Title: On-Device Neural Network for Object Train and Recognition using Mobile

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Abstract: A neural network is a machine learning (ML) program or model that processes information and recognizes patterns, similar to the human brain. The neural network algorithm operates by training on data to learn and enhance its accuracy. If there is any mistake in the learning process, the machine will react unexpectedly and produce incorrect information. So, whenever a neural network model is developed, it is mandatory to evaluate its performance and ensure its output is accurate. Cameras, touchscreens, internet connectivity, and powerful CPUs have contributed to the popularity of smartphones. Mobile apps are software applications that run on smartphones. ML enhances mobile app functionality by offering features such as voice recognition, image analysis, natural language processing, personalization, and recommendations. Training ML models using mobile apps is challenging due to limited resources, data, and privacy concerns. Object recognition is a neural network-based technique that enables the identification and localization of objects in an image or video. This technique is used in driverless cars, disease identification, industrial inspection, robotics, and more. In this paper, the author introduces a new neural network-based algorithm that utilizes mobile devices for training and recognizing images. Although mobile devices have some technological limitations for training, well-established guidelines for systematically mapping verification and validation techniques have been used in the proposed neural network to ensure performance and correctness in on-device object training and recognition.

Keywords: Verification and Validation, Neural Network, Object Train and Recognition, Mobile Application

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