UNIVERSITI TEKNOLOGI MARA

FAKE NEWS IMAGE BASED DETECTION USING CONVOLUTIONAL NEURAL NETWORK

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ABSTRACT

In today's digital era, the ubiquitous presence of social media has facilitated the rapid dissemination of information, including images. However, this connectivity has given rise to a concerning phenomenon – the widespread distribution of fake news images. These manipulated visuals, easily created using available software, pose a serious threat by spreading misinformation and eroding public trust. This research addresses this issue through proposing a Fake News Image-Based Detection system using Convolutional Neural Network (CNN). The study unfolds in several phases, commencing with a comprehensive background study highlighting the prevalence and impact of fake news images in our interconnected world. The problem statement emphasizes the challenges posed by the sophistication of manipulated images, the potential to influence public perception, and the difficulty in detection. The objectives focus on studying the requirements of CNN for detection, developing a prototype, and evaluating its performance. Methodologically, the research navigates through phases, encompassing literature reviews, video analyses, and data collection from a Image Communication Laboratory dataset focusing on copy-move images. The design and development phase culminate in the creation of a CNN-based prototype for Fake News Image-Based Detection. Evaluation metrics, including accuracy, precision, recall, and F1-score, showcase the model's robust performance, achieving an accuracy of 89.29%. In conclusion, the proposed CNN-based approach stands as a promising solution to the challenges posed by fake news images. The high accuracy attained underscores its efficacy in discerning manipulated content. This research contributes to fostering trust and reliability in the digital landscape, offering a valuable tool to combat the adverse effects of misinformation through image manipulation. As technology continues to evolve, ongoing research in this field remains imperative to stay ahead of increasingly sophisticated image manipulation techniques.

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