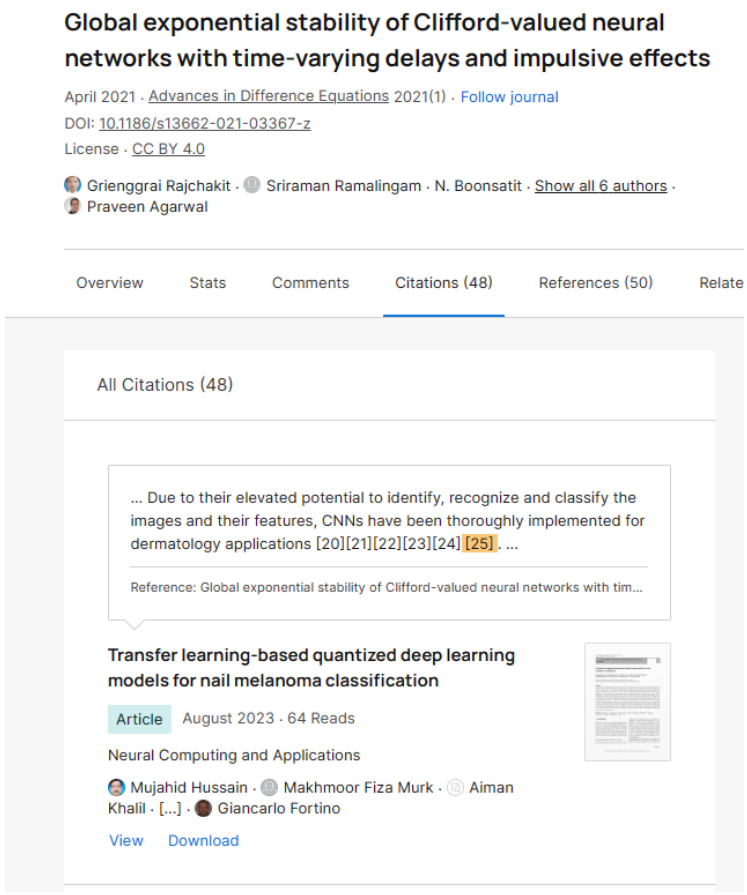
บทความ **Global exponential stability of Clifford-valued neural networks with time-varying delays and impulsive effects**

ถูกอ้างอิงใน วารสารที่อยู่ในฐานข้อมูลที่ กพอ ยอมรับ 1 ครั้ง (August 2023)



Global exponential stability of Clifford-valued neural networks with time-varying delays and impulsive effects

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Transfer learning-based quantized deep learning models for nail melanoma classification

Mujahid Hussain, Makhmoor Fiza, Aiman Khalil, Asad Ali Siyal, Fayaz Ali Dharejo, Waheeduddin Hyder, Antonella Guzzo, Moez Krichen & Giancarlo Fortino

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Abstract

Skin cancer, particularly melanoma, has remained a severe issue for many years due to its increasing incidences. The rising mortality rate associated with melanoma demands immediate attention at early stages to facilitate timely diagnosis and effective treatment. Due to the similar visual appearance of malignant tumors and normal cells, the detection and classification of melanoma are considered to be one of the most challenging tasks. Detecting melanoma accurately and promptly is essential to diagnosis and treatment, which can contribute significantly to patient survival. A new dataset, Nailmelonma, is presented in this study in order to train and evaluate various deep learning models applying transfer learning for an indigenous nail melanoma localization dataset. Using the dermoscopic image datasets, seven CNN-based DL architectures (viz., VGG19, ResNet101, ResNet152V2, Xception, InceptionV3, MobileNet, and MobileNetv2) have been trained and tested for the classification of skin lesions for melanoma detection. The trained models have been validated, and key performance parameters (i.e., accuracy, recall, specificity, precision, and F1-score) are systematically evaluated to test the performance of each transfer learning model. The results indicated that the proposed workflow could realize and achieve more than 95% accuracy. In addition, we show how the quantization of such models can enable them for memory-