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Pořadové číslo: 1/23

<b>ID publikace:</b>	43878908
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	D_ČLÁNEK VE SBORNÍKU
<b>Rozšíření LiF:</b>	D_Článek ve sborníku
<b>Titul (v originále):</b>	Classification of Breast Tumor from Ultrasound Images Using No-Reference Image Quality Assessment
<b>Rok publikace:</b>	2023
<b>Autor:</b>	Ratnadeep Dey (Prac.:)
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<b>Autor:</b>	Christian Kollmann (Prac.:)
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<b>Název zdroje:</b>	Lecture Notes in Networks and Systems
<b>Místo publikace:</b>	Singapore
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<b>e-ISBN:</b>	
<b>Strany:</b>	341-349
<b>Abstrakt orig.:</b>	<p>A computer-aided diagnosis (CAD) system can be helpful for the detection of malignant tumors in the breast. Ultrasound imaging is a type modality with low cost and lower health risk. In this paper, we have classified benign and malignant breast tumors from ultrasound images. We have used the image quality assessment approach for this purpose. No-reference image quality metrics have been used as features for the classification task. We have used a public database of ultrasound images of breast tumors containing 780 images. The classification of breast ultrasound images using image quality assessment is a very novel approach, producing significant results.</p>
<b>Počet stran:</b>	9
<b>Odkazy:</b>	<a href="https://link.springer.com/chapter/10.1007/978-981-19-0105-8_33">https://link.springer.com/chapter/10.1007/978-981-19-0105-8_33</a>
<b>Hlavní klíč:</b>	Breast cancer detection; Breast ultrasound image; Image quality assessment; No-reference image quality metric
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Classification of Breast Tumor from Ultrasound Images Using No-Reference Image Quality Assessment
<b>Datum konání:</b>	30.09.2021
<b>Datum vložení:</b>	01.08.2022
<b>Financování:</b>	S -

Pořadové číslo: 2/23

<b>ID publikace:</b>	43880127
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jimp
<b>Titul (v originále):</b>	Social Recommendation for Social Networks Using Deep Learning Approach: A Systematic Review, Taxonomy, Issues, and Future Directions
<b>Rok publikace:</b>	2023
<b>Autor:</b>	Muhammad Alrashidi (Prac.:)
<b>Autor:</b>	Ali Bin Selamat (Prac.: CZAV)
<b>Autor:</b>	Roliana Ibrahim (Prac.:)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Název zdroje:</b>	IEEE Access
<b>Místo publikace:</b>	Piscataway
<b>Číslo/kód:</b>	May
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<b>e-ISBN:</b>	
<b>Vydavatel:</b>	IEEE
<b>Ročník:</b>	11
<b>Strany:</b>	63874-63894
<b>Abstrakt orig.:</b>	<p>Due to the rise of social media, a vast volume of information is shared daily. Finding relevant and acceptable information has become more challenging as the Internet's information flow has changed and more options have been available. Various recommendation systems have been proposed and successfully used for different applications. This paper presents a taxonomy of deep learning algorithms for social recommendation by examining selected papers using a systematic literature review approach. Forty-six publications were chosen from research published between 2016 and 2022 in six major online libraries. The main purpose of this research is to provide a brief review of published studies to assist future researchers in establishing new strategies in this field. The implantation of deep learning in recommender systems proved to be very effective and achieved competitive performance. Different methods and domains have been summarized to find the most appropriate method and domain.</p>
<b>Počet stran:</b>	21
<b>Odkazy:</b>	<a href="https://ieeexplore.ieee.org/document/10128133">https://ieeexplore.ieee.org/document/10128133</a>
<b>Hlavní klíč:</b>	Deep learning; recommendation system; social recommender
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Social Recommendation for Social Networks Using Deep Learning Approach: A Systematic Review, Taxonomy, Issues, and Future Directions
<b>Datum vložení:</b>	20.07.2023
<b>Financování:</b>	S -

Pořadové číslo: 3/23

<b>ID publikace:</b>	43880132
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jimp
<b>Titul (v originále):</b>	Fine-Grained Sports, Yoga, and Dance Postures Recognition: A Benchmark Analysis
<b>Rok publikace:</b>	2023
<b>Autor:</b>	A. Bera (Prac.:)
<b>Autor:</b>	M. Nasipuri (Prac.:)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Autor:</b>	D. Bhattacharjee (Prac.:)
<b>Název zdroje:</b>	IEEE Transactions on Instrumentation and Measurement
<b>Místo publikace:</b>	Piscataway
<b>Číslo/kód:</b>	July
<b>ISSN:</b>	0018-9456
<b>e-ISSN:</b>	1557-9662
<b>e-ISBN:</b>	
<b>Vydavatel:</b>	IEEE
<b>Ročník:</b>	72
<b>Strany:</b>	"Article Number: 5020613"
<b>Abstrakt orig.:</b>	<p>Human body-pose estimation is a complex problem in computer vision. Recent research interests have been widened specifically on the Sports, Yoga, and Dance (SYD) postures for maintaining health conditions. The SYD pose categories are regarded as a fine-grained image classification task due to the complex movement of body parts. Deep Convolutional Neural Networks (CNNs) have attained significantly improved performance in solving various human body-pose estimation problems. Though decent progress has been achieved in yoga postures recognition using deep learning techniques, fine-grained sports, and dance recognition necessitates ample research attention. However, no benchmark public image dataset with sufficient inter-class and intra-class variations is available yet to address sports and dance postures classification. To solve this limitation, we have proposed two image datasets, one for 102 sport categories and another for 12 dance styles. Two public datasets, Yoga-82 which contains 82 classes and Yoga-107 represents 107 classes are collected for yoga postures. These four SYD datasets are experimented with the proposed deep model, SYD-Net, which integrates a patch-based attention (PbA) mechanism on top of standard backbone CNNs. The PbA module leverages the self-attention mechanism that learns contextual information from a set of uniform and multi-scale patches and emphasizes discriminative features to understand the semantic correlation among patches. Moreover, random erasing data augmentation is applied to improve performance. The proposed SYD-Net has achieved state-of-the-art accuracy on Yoga-82 using five base CNNs. SYD-Net's accuracy on other datasets is remarkable, implying its efficiency. Our Sports-102 and Dance-12 datasets are publicly available at <a href="https://sites.google.com/view/syd-net/home">https://sites.google.com/view/syd-net/home</a>. IEEE</p>
<b>Počet stran:</b>	12
<b>Médium:</b>	PO
<b>Odkazy:</b>	<a href="https://ieeexplore.ieee.org/document/10177209">https://ieeexplore.ieee.org/document/10177209</a>
<b>Hlavní klíč:</b>	Attention; Computer vision; Convolutional Neural Networks (CNNs); Dance; Deep learning; Humanities; Image recognition; Posture Recognition; Random Erasing; Sports; Sports; Three-dimensional displays; Video on demand; Yoga
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Fine-Grained Sports, Yoga, and Dance Postures Recognition: A Benchmark Analysis
<b>Datum vložení:</b>	22.07.2023
<b>Financování:</b>	S -

Pořadové číslo: 4/23

<b>ID publikace:</b>	43880133
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	D_ČLÁNEK VE SBORNÍKU
<b>Rozšíření LiF:</b>	D_Článek ve sborníku
<b>Titul (v originále):</b>	Three-Dimensional Representation and Visualization of High-Grade and Low-Grade Glioma by Nakagami Imaging
<b>Rok publikace:</b>	2023
<b>Autor:</b>	Orcan Alpar (Prac.: CZAV)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Název zdroje:</b>	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
<b>Místo publikace:</b>	Berlín
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<b>ISBN:</b>	978-3-031-34952-2
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<b>e-ISBN:</b>	
<b>Ročník:</b>	13919 LNBI
<b>Strany:</b>	143-154
<b>Abstrakt orig.:</b>	Three-dimensional (3D) visualization of the brain tumors reconstructed from the two-dimensional (2D) magnetic resonance imaging (MRI) sequences plays an important role in volumetric calculations. The reconstructions are usually executed using the fluid attenuated inversion recovery (FLAIR) sequences, where the whole tumors appear brighter than the healthy surrounding tissues. Without any processing; however, reconstruction results might be inconclusive; therefore, we propose a mathematical m-parametric Nakagami imaging for highlighting the lesions. The raw 2D FLAIR MRI images are taken from BraTS 2012 dataset and the highlighted images are generated by the Nakagami imaging. The information on the MRI slices is compiled in three-layered Nakagami images for better visualization of the high-grade and low-grade glioma in 3D space. By the flexible m-parametric design, on the other hand, the reconstructed images might easily be adjusted according to the GT images for precise representation. © 2023, The Author(s), under exclusive license to Springer Nature Switzerland AG.
<b>Počet stran:</b>	12
<b>Médium:</b>	PO
<b>Odkazy:</b>	<a href="https://link.springer.com/chapter/10.1007/978-3-031-34953-9_11">https://link.springer.com/chapter/10.1007/978-3-031-34953-9_11</a>
<b>Hlavní klíč:</b>	brain MRI; nakagami imaging; reconstruction; three-dimensional; visualization
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Three-Dimensional Representation and Visualization of High-Grade and Low-Grade Glioma by Nakagami Imaging
<b>Datum konání:</b>	12.07.2023
<b>Datum vložení:</b>	23.07.2023
<b>Financování:</b>	S -

Pořadové číslo: 5/23

<b>ID publikace:</b>	43880135
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	D_ČLÁNEK VE SBORNÍKU
<b>Rozšíření LiF:</b>	D_Článek ve sborníku
<b>Titul (v originále):</b>	Whole Tumor Area Estimation in Incremental Brain MRI Using Dilation and Erosion-Based Binary Morphing
<b>Rok publikace:</b>	2023
<b>Autor:</b>	Orcan Alpar (Prac.: CZAV)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Název zdroje:</b>	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
<b>Místo publikace:</b>	Berlín
<b>ISSN:</b>	0302-9743
<b>ISBN:</b>	978-3-031-34952-2
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<b>e-ISBN:</b>	
<b>Ročník:</b>	13919 LNBI
<b>Strany:</b>	131-142
<b>Abstrakt orig.:</b>	<p>Magnetic resonance imaging (MRI) technology is rapidly advancing and three-dimensional (3D) scanners started to play an important role on diagnosis. However, not every medical center has access to 3D magnetic resonance imaging (MRI) devices; therefore, it is safe to state that the majority of MRI scans are still two-dimensional. According to the setup values adjusted before any scan, there might be consistent gaps between the MRI slices, especially when the increment value exceeds the thickness. The gap causes miscalculation of the lesion volumes and misjudgments when the lesions are reconstructed in three-dimensional space due to excessive interpolation. Therefore, in this paper, we present the details of three types of conventional morphing methods, one dilation-based and two erosion-based, and compare them to figure out which one provides better solution for filling up the gaps in incremental brain MRI. Among three types of morphing methods, the highest average dice score coefficient (DSC) is calculated as %91.95, which is obtained by the multiplicative dilation morphing method for HG/0004 set of BraTS 2012. © 2023, The Author(s), under exclusive license to Springer Nature Switzerland AG.</p>
<b>Počet stran:</b>	12
<b>Odkazy:</b>	<a href="https://link.springer.com/chapter/10.1007/978-3-031-34953-9_10">https://link.springer.com/chapter/10.1007/978-3-031-34953-9_10</a>
<b>Hlavní klíč:</b>	brain MRI; dilation; erosion; increment; morphing
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Whole Tumor Area Estimation in Incremental Brain MRI Using Dilation and Erosion-Based Binary Morphing
<b>Datum konání:</b>	12.07.2023
<b>Datum vložení:</b>	24.07.2023
<b>Financování:</b>	S -

Pořadové číslo: 6/23

<b>ID publikace:</b>	43880147
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	D_ČLÁNEK VE SBORNÍKU
<b>Rozšíření LiF:</b>	D_Článek ve sborníku
<b>Titul (v originále):</b>	A Guide and Mini-Review on the Performance Evaluation Metrics in Binary Segmentation of Magnetic Resonance Images
<b>Rok publikace:</b>	2023
<b>Autor:</b>	Ayca Kirimtut (Prac.: DěKFIM)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Název zdroje:</b>	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
<b>Místo publikace:</b>	Berlín
<b>ISSN:</b>	0302-9743
<b>ISBN:</b>	978-3-031-34959-1
<b>e-ISSN:</b>	1611-3349
<b>e-ISBN:</b>	
<b>Ročník:</b>	13920 LNBI
<b>Strany:</b>	428-440
<b>Abstrakt orig.:</b>	Eight previously proposed segmentation evaluation metrics for brain magnetic resonance images (MRI), which are sensitivity (SE), specificity (SP), false-positive rate (FPR), false-negative rate (FNR), positive predicted value (PPV), accuracy (ACC), Jaccard index (JAC) and dice score (DSC) are presented and discussed in this paper. These evaluation metrics could be classified into two groups namely pixel-wise metrics and area-wise metrics. We, also, distill the most prominent previously published papers on brain MRI segmentation evaluation metrics between 2021 and 2023 in a detailed literature matrix. The identification of illness or tumor areas using brain MRI image segmentation is a large area of research. However, there is no single segmentation evaluation metric when evaluating the results of brain MRI segmentation in the current literature. Also, the pixel-wise metrics should be supported with the area-wise metrics such as DSC while evaluating the image segmentation results and each metric should be compared with other metrics for better evaluation. © 2023, The Author(s), under exclusive license to Springer Nature Switzerland AG.
<b>Počet stran:</b>	13
<b>Odkazy:</b>	<a href="https://link.springer.com/chapter/10.1007/978-3-031-34960-7_30">https://link.springer.com/chapter/10.1007/978-3-031-34960-7_30</a>
<b>Hlavní klíč:</b>	brain; image segmentation; metrics; MRI
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	A Guide and Mini-Review on the Performance Evaluation Metrics in Binary Segmentation of Magnetic Resonance Images
<b>Datum konání:</b>	12.07.2023
<b>Datum vložení:</b>	31.07.2023
<b>Financování:</b>	S -

Pořadové číslo: 7/23

<b>ID publikace:</b>	43880148
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	D_ČLÁNEK VE SBORNÍKU
<b>Rozšíření LiF:</b>	D_Článek ve sborníku
<b>Titul (v originále):</b>	Role of Parallel Processing in Brain Magnetic Resonance Imaging
<b>Rok publikace:</b>	2023
<b>Autor:</b>	Ayca Kirimtat (Prac.: DěkFIM)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Název zdroje:</b>	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
<b>Místo publikace:</b>	Berlín
<b>ISSN:</b>	0302-9743
<b>ISBN:</b>	978-3-031-34959-1
<b>e-ISSN:</b>	1611-3349
<b>e-ISBN:</b>	
<b>Ročník:</b>	13920 LNBI
<b>Strany:</b>	387-397
<b>Abstrakt orig.:</b>	<p>Parallel processing is a procedure for making computation of more than a processor to overcome the difficulty of separate parts of an overall task. It is really crucial for some medicine-related tasks since the method provide time-efficient computation by a program, thus several calculations could be made simultaneously. Whereas, magnetic resonance imaging (MRI) is one of the medical imaging methods to show form of an anatomy and biological progressions of a human body. Parallel processing methods could be useful for being implemented in MRI with the aim of getting real-time, interventional and time-efficient acquisition of images. Given the need of faster computation on brain MRI to get early and real-time feedbacks in medicine, this paper presents a systematic review of the literature related to brain MRIs focusing on the emerging applications of parallel processing methods for the analysis of brain MRIs. We investigate the articles consisting of these kernels with literature matrices including their, materials, methods, journal types between 2013 and 2023. We distill the most prominent key concepts of parallel processing methods. © 2023, The Author(s), under exclusive license to Springer Nature Switzerland AG.</p>
<b>Počet stran:</b>	11
<b>Odkazy:</b>	<a href="https://link.springer.com/chapter/10.1007/978-3-031-34960-7_27">https://link.springer.com/chapter/10.1007/978-3-031-34960-7_27</a>
<b>Hlavní klíč:</b>	brain; MRI; parallel processing; review; Web of Science
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Role of Parallel Processing in Brain Magnetic Resonance Imaging
<b>Datum konání:</b>	12.07.2023
<b>Datum vložení:</b>	31.07.2023
<b>Financování:</b>	S -

Pořadové číslo: 8/23

<b>ID publikace:</b>	43880180
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	C_KAPITOLA V ODBORNÉ KNIZE
<b>Rozšíření LiF:</b>	C_kapitola v odborné knize
<b>Titul (v originále):</b>	Detecting Phishing URLs With Word Embedding and Deep Learning
<b>Rok publikace:</b>	2023
<b>Autor:</b>	Ali Bin Selamat (Prac.: CZAV)
<b>Autor:</b>	Nguyet Quang Do (Prac.:)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Název zdroje:</b>	Perspectives and Considerations on the Evolution of Smart Systems
<b>Místo publikace:</b>	Hershey
<b>ISBN:</b>	978-1-66847-684-0
<b>e-ISSN:</b>	
<b>e-ISBN:</b>	
<b>Strany:</b>	296-319
<b>Abstrakt orig.:</b>	<p>learning in the phishing detection domain. However, there needs to be more research on word embedding and deep learning for malicious URL classification. Inspired to solve this problem, this chapter aims to examine the application of word embedding and deep learning in extracting features from website URLs. To achieve this, several word embedding techniques, such as Keras, Word2Vec, GloVe, and FastText, were used to learn feature representations of webpage URLs. The obtained feature vectors were fed into a deep-learning model based on CNN-BiGRU for extraction and classification. Two different datasets were used to conduct numerous experiments, while various metrics were utilized to evaluate the phishing detection model's performance. The obtained findings indicated that when combined with deep learning, Keras outperformed other text embedding methods and achieved the best results across all evaluation metrics on both datasets.</p>
<b>Počet stran:</b>	24
<b>Médium:</b>	PO
<b>Odkazy:</b>	<a href="https://www.igi-global.com/gateway/chapter/327534">https://www.igi-global.com/gateway/chapter/327534</a>
<b>Hlavní klíč:</b>	Detecting; Phishing; URLs; With; Word; Embedding; and; Deep; Learning
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Detecting Phishing URLs With Word Embedding and Deep Learning
<b>Datum vložení:</b>	14.08.2023
<b>Financování:</b>	S -



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<b>ID publikace:</b>	43879494
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jump
<b>Titul (v originále):</b>	A Novel Parameter Adaptive Dual Channel MSPCNN Based Single Image Dehazing for Intelligent Transportation Systems
<b>Rok publikace:</b>	2023
<b>Autor:</b>	Geet Sahu (Prac.:)
<b>Autor:</b>	Ayan Seal (Prac.:)
<b>Autor:</b>	Debotosh Bhattacharjee (Prac.:)
<b>Autor:</b>	Robert Frischer (Prac.:)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Název zdroje:</b>	IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS
<b>Místo publikace:</b>	PISCATAWAY
<b>Číslo/kód:</b>	3
<b>ISSN:</b>	1524-9050
<b>e-ISSN:</b>	1558-0016
<b>e-ISBN:</b>	
<b>Ročník:</b>	24
<b>Strany:</b>	3027-3047
<b>Abstrakt orig.:</b>	<p>Visibility issues in intelligent transportation systems are exacerbated by bad weather conditions such as fog and haze. It has been observed from recent studies that major road accidents have occurred in the world due to low visibility and inclement weather conditions. Single image dehazing attempts to restore a haze-free image from an unconstrained hazy image. We proposed a dehazing method by cascading two models utilizing a novel parameter-adaptive dual-channel modified simplified pulse coupled neural network (PA-DC-MSPCNN). The first model uses a new color channel for removing haze from images. The second model is the improved brightness preserving model (I-GIHE), which retains the brightness of the image while improving the gradient strength. To integrate the results from these two models and provide a pleasing haze-free image, a PA-DC-MSPCNN-based fusion is used. Furthermore, the proposed approach is deployed on a Xilinx Zynq SoC by exploiting the recently released PYNQ platform. The dehazing system runs on a PYNQ-Z2 all-programmable SoC platform, where it will input the camera feed through the FPGA unit and carry out the dehazing algorithm in the ARM core. This configuration has allowed reaching real-time processing speed for image dehazing. The results of dehazing are analyzed using both synthetic and real-world hazy images. Synthetic hazy images are acquired from the O-HAZE, I-HAZE, SOTS, and FRIDA datasets, while real-world hazy images are taken from the RailSem19, E-TUVD dataset, and the internet. For evaluation, twelve cutting-edge approaches are chosen. The proposed method is also analyzed on underwater and low-light images. Extensive experiments indicate that the proposed method outperforms state-of-the-art methods of qualitative and quantitative performances.</p>
<b>Počet stran:</b>	21
<b>Médium:</b>	PO
<b>Odkazy:</b>	<a href="https://ieeexplore.ieee.org/document/9990596">https://ieeexplore.ieee.org/document/9990596</a>
<b>Hlavní klíč:</b>	Image dehazing; radiance; pulse coupled neural network; fusion; PYNQ-Z2
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	A Novel Parameter Adaptive Dual Channel MSPCNN Based Single Image Dehazing for Intelligent Transportation Systems
<b>Datum vložení:</b>	09.01.2023
<b>Financování:</b>	I -
<b>Financování:</b>	S -

Pořadové číslo: 10/23

<b>ID publikace:</b>	43879635
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jimp
<b>Titul (v originále):</b>	ASER analysis of generalized hexagonal QAM schemes for NOMA systems over Nakagami-m fading channels
<b>Rok publikace:</b>	2023
<b>Autor:</b>	S. Bisen (Prac.:)
<b>Autor:</b>	P. Shaik (Prac.:)
<b>Autor:</b>	J. Jose (Prac.:)
<b>Autor:</b>	J. Nebhen (Prac.:)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Autor:</b>	Vimal Bhatia (Prac.: Děkfim)
<b>Název zdroje:</b>	International Journal of Communication Systems
<b>Číslo/kód:</b>	6
<b>ISSN:</b>	1074-5351
<b>e-ISSN:</b>	1099-1131
<b>e-ISBN:</b>	
<b>Ročník:</b>	36
<b>Strany:</b>	"Article number: e5440"
<b>Abstrakt orig.:</b>	<p>To achieve high data rates expected from beyond 5G communications, higher-order modulation techniques have been explored. The energy-efficient modulation technique with a high data rate has encouraged researches towards an optimum two-dimensional hexagonal-shaped constellation, namely, hexagonal quadrature amplitude modulation (HQAM). Thus, in this work, we analyze the average symbol error rate (ASER) of HQAM schemes by considering a two-user nonorthogonal multiple access (NOMA) pair. Closed-form expressions for ASER of HQAM schemes for users are derived over generalized Nakagami- (Formula presented.) fading channels. Further, for the HQAM constellation feasibility in two-user downlink NOMA systems, the power allocation criterion for the users is presented. Furthermore, the impact of modulation order of the users over the systems ASER analysis is investigated and valuable insights are drawn. © 2023 John Wiley &amp; Sons Ltd.</p>
<b>Počet stran:</b>	15
<b>Odkazy:</b>	<a href="https://onlinelibrary.wiley.com/doi/10.1002/dac.5440">https://onlinelibrary.wiley.com/doi/10.1002/dac.5440</a>
<b>Hlavní klíč:</b>	ASER; M-ary HQAM; Nakagami-m; NOMA
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	ASER analysis of generalized hexagonal QAM schemes for NOMA systems over Nakagami-m fading channels
<b>Datum vložení:</b>	27.01.2023
<b>Financování:</b>	S -

Pořadové číslo: 11/23

<b>ID publikace:</b>	43879369
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jimp
<b>Titul (v originále):</b>	Dynamics of a two-layer neuronal network with asymmetry in coupling
<b>Rok publikace:</b>	2023
<b>Autor:</b>	S. Sriram (Prac.:
<b>Autor:</b>	H. Natiq (Prac.:
<b>Autor:</b>	K. Rajagopal (Prac.:
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Autor:</b>	Hamidreza Namazi (Prac.: CZAV)
<b>Název zdroje:</b>	Mathematical Biosciences and Engineering
<b>Číslo/kód:</b>	2
<b>ISSN:</b>	1547-1063
<b>e-ISSN:</b>	1551-0018
<b>e-ISBN:</b>	
<b>Vydání:</b>	2
<b>Ročník:</b>	20
<b>Strany:</b>	2908-2919
<b>Abstrakt orig.:</b>	<p>Investigating the effect of changes in neuronal connectivity on the brain's behavior is of interest in neuroscience studies. Complex network theory is one of the most capable tools to study the effects of these changes on collective brain behavior. By using complex networks, the neural structure, function, and dynamics can be analyzed. In this context, various frameworks can be used to mimic neural networks, among which multi-layer networks are a proper one. Compared to single-layer models, multi-layer networks can provide a more realistic model of the brain due to their high complexity and dimensionality. This paper examines the effect of changes in asymmetry coupling on the behaviors of a multi-layer neuronal network. To this aim, a two-layer network is considered as a minimum model of left and right cerebral hemispheres communicated with the corpus callosum. The chaotic model of Hindmarsh-Rose is taken as the dynamics of the nodes. Only two neurons of each layer connect two layers of the network. In this model, it is assumed that the layers have different coupling strengths, so the effect of each coupling change on network behavior can be analyzed. As a result, the projection of the nodes is plotted for several coupling strengths to investigate how the asymmetry coupling influences the network behaviors. It is observed that although no coexisting attractor is present in the Hindmarsh-Rose model, an asymmetry in couplings causes the emergence of different attractors. The bifurcation diagrams of one node of each layer are presented to show the variation of the dynamics due to coupling changes. For further analysis, the network synchronization is investigated by computing intra-layer and inter-layer errors. Calculating these errors shows that the network can be synchronized only for large enough symmetric coupling. ©2023 the Author(s).</p>
<b>Počet stran:</b>	12
<b>Odkazy:</b>	<a href="http://www.aimspress.com/article/doi/10.3934/mbe.2023137">http://www.aimspress.com/article/doi/10.3934/mbe.2023137</a>
<b>Hlavní klíč:</b>	asymmetry coupling; attractor; multi-layer networks; neuronal network; synchronization
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Dynamics of a two-layer neuronal network with asymmetry in coupling
<b>Datum vložení:</b>	22.12.2022
<b>Financování:</b>	S -

Pořadové číslo: 12/23

<b>ID publikace:</b>	43879666
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jimp
<b>Titul (v originále):</b>	Imbalanced Classification Methods for Student Grade Prediction: A Systematic Literature Review
<b>Rok publikace:</b>	2023
<b>Autor:</b>	Siti Dianah Abdul Bujang (Prac.:
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<b>Autor:</b>	Farhan Mohamed (Prac.:
<b>Autor:</b>	Lim Kok Cheng (Prac.:
<b>Autor:</b>	Po Chan Chiu (Prac.:
<b>Autor:</b>	Hamido Fujita (Prac.:
<b>Název zdroje:</b>	IEEE Access
<b>Místo publikace:</b>	Piscataway
<b>Číslo/kód:</b>	January
<b>ISSN:</b>	2169-3536
<b>e-ISSN:</b>	2169-3536
<b>e-ISBN:</b>	
<b>Vydavatel:</b>	IEEE
<b>Ročník:</b>	11
<b>Strany:</b>	1970-1989
<b>Abstrakt orig.:</b>	<p>Student success is essential for improving the higher education system student outcome. One way to measure student success is by predicting students' performance based on their prior academic grades. Concerning the significance of this area, various predictive models are widely developed and applied to help the institution identify students at risk of failure. However, building a high-accuracy predictive model is challenging due to the dataset's imbalanced nature, which caused biased results. Therefore, this study aims to review the existing research article by providing a state-of-the-art approach for handling imbalanced classification in higher education, including the best practices of dataset characteristics, methods, and comparative analysis of the proposed algorithms, focusing on student grade prediction context problems. The study also presents the most common balancing methods published from 2015 to 2021 and highlights their impact on resolving imbalanced classification in three approaches: data-level, algorithm-level, and hybrid-level. The survey results reveal that the data-level approach using SMOTE oversampling is broadly applied in determining imbalanced problems for student grade prediction. However, the application of hybrid and feature selection methods supporting the generalization of the predictive model to boost student grade prediction performance is generally lacking. Other than that, some of the strengths and weaknesses of the proposed methods are discussed and summarized for the direction of future research. The outcomes of this review will guide the professionals, practitioners, and academic researchers in dealing with imbalanced classification, mainly in the higher education field.</p>
<b>Počet stran:</b>	20
<b>Odkazy:</b>	<a href="https://ieeexplore.ieee.org/document/9965398/authors#authors">https://ieeexplore.ieee.org/document/9965398/authors#authors</a>
<b>Hlavní klíč:</b>	Predictive models; Systematics; Machine learning; Prediction algorithms; Classification algorithms; Data mining; Bibliographies; Imbalanced classification; prediction model; machine learning; student grade prediction; education
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Imbalanced Classification Methods for Student Grade Prediction: A Systematic Literature Review
<b>Datum vložení:</b>	30.01.2023
<b>Financování:</b>	S -

Pořadové číslo: 13/23

<b>ID publikace:</b>	43879742
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jimp
<b>Titul (v originále):</b>	Decoding the correlation between heart activation and walking path by information-based analysis
<b>Rok publikace:</b>	2023
<b>Autor:</b>	Shahul Mujib Kamal (Prac.:)
<b>Autor:</b>	Mohammad Hossein Babini (Prac.:)
<b>Autor:</b>	Rui Tee (Prac.:)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Autor:</b>	Hamidreza Namazi (Prac.: CZAV)
<b>Název zdroje:</b>	Technology and Health Care
<b>Místo publikace:</b>	AMSTERDAM
<b>Číslo/kód:</b>	1
<b>ISSN:</b>	0928-7329
<b>e-ISSN:</b>	1878-7401
<b>e-ISBN:</b>	
<b>Ročník:</b>	31
<b>Strany:</b>	205-215
<b>Abstrakt orig.:</b>	<p>BACKGROUND: One of the important areas of heart research is to analyze heart rate variability during (HRV) walking. OBJECTIVE: In this research, we investigated the correction between heart activation and the variations of walking paths. METHOD: We employed Shannon entropy to analyze how the information content of walking paths affects the information content of HRV. Eight healthy students walked on three designed walking paths with different information contents while we recorded their ECG signals. We computed and analyzed the Shannon entropy of the R-R interval time series (as an indicator of HRV) versus the Shannon entropy of different walking paths and accordingly evaluated their relation. RESULTS: According to the obtained results, walking on the path that contains more information leads to less information in the R-R time series. CONCLUSION: The analysis method employed in this research can be extended to analyze the relation between other physiological signals (such as brain or muscle reactions) and the walking path.</p>
<b>Počet stran:</b>	11
<b>Odkazy:</b>	<a href="https://content.iospress.com/articles/technology-and-health-care/thc220191">https://content.iospress.com/articles/technology-and-health-care/thc220191</a>
<b>Hlavní klíč:</b>	Heart Rate Variability (HRV); walking path; Shannon entropy; information content; R-R interval time series
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Decoding the correlation between heart activation and walking path by information-based analysis
<b>Datum vložení:</b>	13.02.2023
<b>Financování:</b>	S -

Pořadové číslo: 14/23

<b>ID publikace:</b>	43879787
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jimp
<b>Titul (v originále):</b>	Securing Optical Networks Using Quantum-Secured Blockchain: An Overview
<b>Rok publikace:</b>	2023
<b>Autor:</b>	P. Sharma (Prac.:
<b>Autor:</b>	K. Choi (Prac.:
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Autor:</b>	Pavel Blažek (Prac.: CZAV)
<b>Autor:</b>	Vimal Bhatia (Prac.: DěKFIM)
<b>Autor:</b>	S. Prakash (Prac.:
<b>Název zdroje:</b>	Sensors
<b>Místo publikace:</b>	Basilej
<b>Číslo/kód:</b>	3
<b>ISSN:</b>	1424-8220
<b>e-ISSN:</b>	1424-8220
<b>e-ISBN:</b>	
<b>Vydavatel:</b>	MDPI-Molecular diversity preservation international
<b>Ročník:</b>	23
<b>Strany:</b>	"Article number: 1228"
<b>Abstrakt orig.:</b>	<p>The deployment of optical network infrastructure and development of new network services are growing rapidly for beyond 5/6G networks. However, optical networks are vulnerable to several types of security threats, such as single-point failure, wormhole attacks, and Sybil attacks. Since the uptake of e-commerce and e-services has seen an unprecedented surge in recent years, especially during the COVID-19 pandemic, the security of these transactions is essential. Blockchain is one of the most promising solutions because of its decentralized and distributed ledger technology, and has been employed to protect these transactions against such attacks. However, the security of blockchain relies on the computational complexity of certain mathematical functions, and because of the evolution of quantum computers, its security may be breached in real-time in the near future. Therefore, researchers are focusing on combining quantum key distribution (QKD) with blockchain to enhance blockchain network security. This new technology is known as quantum-secured blockchain. This article describes different attacks in optical networks and provides a solution to protect networks against security attacks by employing quantum-secured blockchain in optical networks. It provides a brief overview of blockchain technology with its security loopholes, and focuses on QKD, which makes blockchain technology more robust against quantum attacks. Next, the article provides a broad view of quantum-secured blockchain technology. It presents the network architecture for the future research and development of secure and trusted optical networks using quantum-secured blockchain. The article also highlights some research challenges and opportunities. © 2023 by the authors.</p>
<b>Počet stran:</b>	20
<b>Médium:</b>	O
<b>Odkazy:</b>	<a href="https://www.mdpi.com/1424-8220/23/3/1228">https://www.mdpi.com/1424-8220/23/3/1228</a>
<b>Hlavní klíč:</b>	attacks; blockchain; optical networks; quantum key distribution; quantum-secured blockchain; security
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Securing Optical Networks Using Quantum-Secured Blockchain: An Overview
<b>Datum vložení:</b>	24.02.2023
<b>Financování:</b>	S -

Pořadové číslo: 15/23

<b>ID publikace:</b>	43879825
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jump
<b>Titul (v originále):</b>	Study on Sperm-Cell Detection Using YOLOv5 Architecture with Labeled Dataset
<b>Rok publikace:</b>	2023
<b>Autor:</b>	Michal Dobrovolný (Prac.: DěKFIM)
<b>Autor:</b>	Jakub Beneš (Prac.: DěKFIM)
<b>Autor:</b>	Jaroslav Langer (Prac.: DěKFIM)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Autor:</b>	Ali Bin Selamat (Prac.: CZAV)
<b>Název zdroje:</b>	Genes
<b>Místo publikace:</b>	Basilej
<b>Číslo/kód:</b>	2
<b>ISSN:</b>	2073-4425
<b>e-ISSN:</b>	2073-4425
<b>e-ISBN:</b>	
<b>Vydavatel:</b>	MDPI-Molecular diversity preservation international
<b>Ročník:</b>	14
<b>Strany:</b>	:Article number: 451"
<b>Abstrakt orig.:</b>	<p>Infertility has recently emerged as a severe medical problem. The essential elements in male infertility are sperm morphology, sperm motility, and sperm density. In order to analyze sperm motility, density, and morphology, laboratory experts do a semen analysis. However, it is simple to err when using a subjective interpretation based on laboratory observation. In this work, a computer-aided sperm count estimation approach is suggested to lessen the impact of experts in semen analysis. Object detection techniques concentrating on sperm motility estimate the number of active sperm in the semen. This study provides an overview of other techniques that we can compare. The Visem dataset from the Association for Computing Machinery was used to test the proposed strategy. We created a labelled dataset to prove that our network can detect sperms in images. The best not-super tuned result is mAP (Formula presented.). © 2023 by the authors.</p>
<b>Počet stran:</b>	14
<b>Odkazy:</b>	<a href="https://www.mdpi.com/2073-4425/14/2/451">https://www.mdpi.com/2073-4425/14/2/451</a>
<b>Hlavní klíč:</b>	computer-aided sperm analysis; small-object detection; sperm-cell detection; yolo
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Study on Sperm-Cell Detection Using YOLOv5 Architecture with Labeled Dataset
<b>Datum vložení:</b>	05.03.2023
<b>Financování:</b>	S -

Pořadové číslo: 16/23

<b>ID publikace:</b>	43879090
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jimp
<b>Titul (v originále):</b>	Benchmarks for machine learning in depression discrimination using electroencephalography signals
<b>Rok publikace:</b>	2023
<b>Autor:</b>	Ayan Seal (Prac.:)
<b>Autor:</b>	Rishabh Bajpai (Prac.:)
<b>Autor:</b>	Mohan Karnati (Prac.:)
<b>Autor:</b>	Jagriti Agnihotri (Prac.:)
<b>Autor:</b>	Anis Yazidi (Prac.:)
<b>Autor:</b>	Enrique Herrera-Viedma (Prac.:)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Název zdroje:</b>	Applied Intelligence
<b>Místo publikace:</b>	DORDRECHT
<b>Číslo/kód:</b>	10
<b>ISSN:</b>	0924-669X
<b>e-ISSN:</b>	1573-7497
<b>Vydavatel:</b>	Springer
<b>Ročník:</b>	53
<b>Strany:</b>	12666-12683
<b>Abstrakt orig.:</b>	<p>Diagnosis of depression using electroencephalography (EEG) is an emerging field of study. When mental health facilities are unavailable, the use of EEG as an objective measure for depression management at an individual level becomes necessary. However, the limited availability of the openly accessible EEG datasets for depression and the non-standard task paradigm confine the scope of the research. This study contributes to the area by presenting a dataset that includes EEG data of subjects in the resting state and Patient Health Questionnaire (PHQ)-9 scores. These recordings incorporate EEG signals under both eyes open (EO) and eyes closed (EC) conditions. Moreover, this work documents high performance on various benchmark depression classification tasks with the help of traditional supervised machine learning algorithms, namely Decision Tree, Random Forest, k-Nearest Neighbours, Naive Bayes, Support Vector Machine, Multi-Layer Perceptron, and extreme gradient boosted trees (XGBoost) using the newly created dataset, where the class label of each patient is determined by the PHQ-9 score of the person. Then, feature selection is performed on twenty-three linear, nonlinear, time domain, and frequency domain features using ANOVA test and correlation analysis to identify statistically significant features, which are further fed into algorithms mentioned above separately for distinguishing healthy subjects from depressed. Among these classifiers, the performance of the XGBoost is found to be the best, with an accuracy of 87% for the EO state. The obtained results demonstrate that the proposed method outperforms fourteen existing approaches. The dataset presented in this work can be downloaded via <a href="https://drive.google.com/drive/folders/1ANUC-6hq02QG728ZWv2a1UWTLUbRqy?usp=sharing">https://drive.google.com/drive/folders/1ANUC-6hq02QG728ZWv2a1UWTLUbRqy?usp=sharing</a>.</p>
<b>Počet stran:</b>	18
<b>Médium:</b>	PO
<b>Odkazy:</b>	<a href="https://link.springer.com/article/10.1007/s10489-022-04159-y">https://link.springer.com/article/10.1007/s10489-022-04159-y</a>
<b>Hlavní klíč:</b>	Depression analysis; Electroencephalography; Signal processing; Feature extraction; Feature selection; Pattern classification
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Benchmarks for machine learning in depression discrimination using electroencephalography signals
<b>Datum vložení:</b>	12.10.2022
<b>Financování:</b>	I -
<b>Financování:</b>	S -



Pořadové číslo: 17/23

<b>ID publikace:</b>	43880298
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	D_ČLÁNEK VE SBORNÍKU
<b>Rozšíření LiF:</b>	D_Článek ve sborníku
<b>Titul (v originále):</b>	Deep Learning for Segmentation of Polyps for Early Prediction of Colorectal Cancer: A Prosperous Direction
<b>Rok publikace:</b>	2023
<b>Autor:</b>	D. Banik (Prac.:)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Autor:</b>	Debotosh Bhattacharjee (Prac.: DěKFIM)
<b>Název zdroje:</b>	Lecture Notes in Networks and Systems
<b>Místo publikace:</b>	Singapore
<b>ISSN:</b>	2367-3370
<b>ISBN:</b>	978-981-9926-79-4
<b>e-ISSN:</b>	2367-3389
<b>e-ISBN:</b>	
<b>Ročník:</b>	690 LNNS
<b>Strany:</b>	415-422
<b>Abstrakt orig.:</b>	Accurate segmentation of colorectal polyps is crucial for the early diagnosis of Colorectal Cancer (CRC). In clinical practice, the segmented polyp provides valuable diagnostic information to decide the degree of malignancy through optical biopsy. However, precise segmentation of polyps is very challenging as the appearance and morphology of polyps change in different stages of development in terms of size, color, and texture. In recent years, numerous deep learning (DL) techniques have been put forward by researchers across the globe for the polyp segmentation task. This study retrieved some significant deep learning-based polyp segmentation techniques through a systematic search strategy. The main purpose of this study is to provide an intuitive understanding of the techniques that have brought a major contribution to this field. © 2023, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.
<b>Počet stran:</b>	8
<b>Odkazy:</b>	<a href="https://link.springer.com/chapter/10.1007/978-981-99-2680-0_36">https://link.springer.com/chapter/10.1007/978-981-99-2680-0_36</a>
<b>Hlavní klíč:</b>	Colorectal cancer; Deep learning; Polyp; Segmentation
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Deep Learning for Segmentation of Polyps for Early Prediction of Colorectal Cancer: A Prosperous Direction
<b>Datum konání:</b>	19.12.2022
<b>Datum vložení:</b>	03.10.2023
<b>Financování:</b>	S -

Pořadové číslo: 18/23

<b>ID publikace:</b>	43880299
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	D_ČLÁNEK VE SBORNÍKU
<b>Rozšíření LiF:</b>	D_Článek ve sborníku
<b>Titul (v originále):</b>	No-Reference Image Quality Assessment Using Meta-Learning
<b>Rok publikace:</b>	2023
<b>Autor:</b>	R. Dey (Prac.:
<b>Autor:</b>	Debotosh Bhattacharjee (Prac.: Děkfim)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Název zdroje:</b>	Lecture Notes in Networks and Systems
<b>Místo publikace:</b>	Singapur
<b>ISSN:</b>	2367-3370
<b>ISBN:</b>	978-981-9926-79-4
<b>e-ISSN:</b>	
<b>e-ISBN:</b>	
<b>Ročník:</b>	690 LNNS
<b>Strany:</b>	137-144
<b>Abstrakt orig.:</b>	<p>Deep learning-based no-reference image quality assessment faces problems like dependency on a large amount of experimental data and the generalization ability of the learned model. A deep learning model trained on a specific dataset cannot obtain the desired results for testing on other datasets. Similarly, a deep learning model trained with small experiment data does not provide the best result. This paper addresses these problems of the deep learning model using the meta-learning approach in the field of no-reference Image Quality Assessment. The no-reference image quality assessment is a small sample problem, where the amount of experimental data is very less. Although data augmentation techniques have been used to increase the amount of experimental data, they do not increase the variation of the data. Therefore, traditional deep learning-based techniques are unsuitable for no-reference image quality assessment. Another problem is the lack of generalization ability. A deep learning model trained with image quality datasets containing images distorted synthetically cannot efficiently assess the quality of images distorted naturally. This work proposes a meta-learning model that can be trained with more than one image quality dataset, where one image quality assessment dataset contains synthetic images and the other contains real images. Finally, another image quality assessment dataset has tested the trained model. The test result is better than the state-of-the-art methods, and the results establish the fact that the meta-learning model proposed in this paper tries to resolve the problems of the deep learning model. © 2023, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.</p>
<b>Počet stran:</b>	8
<b>Odkazy:</b>	<a href="https://link.springer.com/chapter/10.1007/978-981-99-2680-0_13">https://link.springer.com/chapter/10.1007/978-981-99-2680-0_13</a>
<b>Hlavní klíč:</b>	Meta learning; Meta-learning based IQA; No-reference IQA
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	No-Reference Image Quality Assessment Using Meta-Learning
<b>Datum konání:</b>	19.12.2022
<b>Datum vložení:</b>	03.10.2023
<b>Financování:</b>	S -

Pořadové číslo: 19/23

<b>ID publikace:</b>	43880300
<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	D_ČLÁNEK VE SBORNÍKU
<b>Rozšíření LiF:</b>	D_Článek ve sborníku
<b>Titul (v originále):</b>	A Survey on COVID-19 Lesion Segmentation Techniques from Chest CT Images
<b>Rok publikace:</b>	2023
<b>Autor:</b>	K. Roy (Prac.:)
<b>Autor:</b>	Debotosh Bhattacharjee (Prac.: DěKFIM)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Název zdroje:</b>	Lecture Notes in Networks and Systems
<b>Místo publikace:</b>	Singapur
<b>ISSN:</b>	2367-3370
<b>ISBN:</b>	978-981-9926-79-4
<b>e-ISSN:</b>	
<b>e-ISBN:</b>	
<b>Ročník:</b>	690 LNNS
<b>Strany:</b>	567-574
<b>Abstrakt orig.:</b>	<p>The COVID-19 pandemic had a catastrophic effect on almost every country, with a reported 6 million deaths by 2022. It is caused by an RNA virus named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). To date, there have been five variants of SARS-CoV-2, namely alpha, beta, gamma, delta, and omicron. Each of these variants can potentially infect more and more people and are highly contagious. COVID-19 affects almost all body organs, but its pulmonary involvement is the greatest. Most of the reported deaths have been due to pneumonia. CT-Scan is crucial in understanding the patient's lung condition during and post-COVID. Radiologists found that lung lesions like ground glass opacity (GGO), consolidations, etc., indicate pneumonia. By analyzing the spread of these lesions in the chest CT image of COVID-19-infected patients, physicians could determine the lung condition and prescribe suitable treatments. The traditional methods of analyzing lesions are prone to manual error and inter-observer variations. Developing an automated system for lesion segmentation is essential for disease diagnosis and prognosis. This study presents an in-depth survey of various lesion segmentation techniques. All the state-of-the-art methods covered in this review paper have been described in detail, including their methodology, dataset used, and performance metrics. This survey will help accelerate the research in COVID-19 lesion segmentation since it will provide detailed insight into the pros and cons of every paper included in this study. © 2023, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.</p>
<b>Počet stran:</b>	8
<b>Odkazy:</b>	<a href="https://link.springer.com/chapter/10.1007/978-981-99-2680-0_13">https://link.springer.com/chapter/10.1007/978-981-99-2680-0_13</a>
<b>Hlavní klíč:</b>	Consolidation; COVID-19; CT-Scan; Ground glass opacity; Lesion segmentation; Survey
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	A Survey on COVID-19 Lesion Segmentation Techniques from Chest CT Images
<b>Datum konání:</b>	19.12.2022
<b>Datum vložení:</b>	03.10.2023
<b>Financování:</b>	S -

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<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jimp
<b>Titul (v originále):</b>	Deep learning based processing framework for spatio-temporal analysis and classification of laser biospeckle data
<b>Rok publikace:</b>	2024
<b>Autor:</b>	P.S. Thakur (Prac.:
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<b>Autor:</b>	S. Prakash (Prac.:
<b>Název zdroje:</b>	Optics and Laser Technology
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<b>Ročník:</b>	169
<b>Strany:</b>	"Article number: 110138"
<b>Abstrakt orig.:</b>	<p>Laser biospeckle is an advanced optical technique with the ability to non-destructively visualize various transient phenomenon via spatial and temporal statistics. However, accuracy of the existing image processing techniques used to process biospeckle data is hampered by various experimental and process dependent factors. Therefore, in this work, a novel 3D convolution neural network (3D CNN) based deep learning (DL) architecture is developed for spatio-temporal analysis of biospeckle data in both qualitative and quantitative domains that effectively reduces errors introduced due to the influence of varying experimental parameters. Firstly, 3D CNN based image processing model is proposed for spatio-temporal analysis and classification of biospeckle data. Furthermore, a novel DL based numerical indexing strategy is developed for identification of level of activity in a sample. Finally, impact of varying experimental parameters on accuracy of the proposed technique is analyzed. In this direction, multiple experiments were performed to examine the effect of variation in input data parameters such as frame dimension, frame rate, number of frames, and background noise on accuracy of the trained model. Performance of the proposed model was analyzed and compared with respect to synthetic data generated by using rotating diffuser based simulation model. Robustness of the proposed strategy was also validated experimentally on practical data associated with identification of disease in seeds. Obtained results demonstrated that the proposed technique is accurate and can perform spatio-temporal classification and numerical indexing of the biospeckle data under varying experimental parameters. © 2023 Elsevier Ltd</p>
<b>Počet stran:</b>	15
<b>Odkazy:</b>	<a href="https://www.sciencedirect.com/science/article/pii/S0030399223010319?pes=">https://www.sciencedirect.com/science/article/pii/S0030399223010319?pes=</a>
<b>Hlavní klíč:</b>	Convolution neural network; Deep learning; Image processing; Laser biospeckle; Photonics; Seed infection
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Deep learning based processing framework for spatio-temporal analysis and classification of laser biospeckle data
<b>Datum vložení:</b>	09.10.2023
<b>Financování:</b>	S -
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<b>Literární forma:</b>	D_ČLÁNEK VE SBORNÍKU
<b>Rozšíření LiF:</b>	D_Článek ve sborníku
<b>Titul (v originále):</b>	Obfuscated Malware Detection: Impacts on Detection Methods
<b>Rok publikace:</b>	2023
<b>Autor:</b>	N.Z. Gorment (Prac.:)
<b>Autor:</b>	Ali Bin Selamat (Prac.: CZAV)
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<b>Název zdroje:</b>	Communications in Computer and Information Science
<b>Místo publikace:</b>	Cham
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<b>e-ISBN:</b>	
<b>Ročník:</b>	1863 CCIS
<b>Strany:</b>	55-66
<b>Abstrakt orig.:</b>	<p>Obfuscated malware poses a challenge to traditional malware detection methods as it uses various techniques to disguise its behavior and evade detection. This paper focuses on the impacts of obfuscated malware detection techniques using a variety of detection methods. Furthermore, this paper discusses the current state of obfuscated malware, the methods used to detect it, and the limitations of those methods. The impact of obfuscation on the effectiveness of detection methods is also discussed. An approach for the creation of advanced detection techniques based on machine learning algorithms is offered, along with an empirical examination of malware detection performance assessment to battle obfuscated malware. Overall, this paper highlights the importance of staying ahead of the constantly evolving threat landscape to safeguard computer networks and systems. © 2023, The Author(s), under exclusive license to Springer Nature Switzerland AG.</p>
<b>Počet stran:</b>	12
<b>Médium:</b>	PO
<b>Odkazy:</b>	<a href="https://link.springer.com/chapter/10.1007/978-3-031-42430-4_5">https://link.springer.com/chapter/10.1007/978-3-031-42430-4_5</a>
<b>Hlavní klíč:</b>	Machine learning algorithm; Malware detection; Obfuscated malware
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Obfuscated Malware Detection: Impacts on Detection Methods
<b>Datum konání:</b>	24.07.2023
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<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jimp
<b>Titul (v originále):</b>	Hyperparameter-Free RFF Based Post-Distorter for OTFS VLC System
<b>Rok publikace:</b>	2023
<b>Autor:</b>	A. Sharma (Prac.:)
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<b>Autor:</b>	K. Choi (Prac.:)
<b>Autor:</b>	Michal Dobrovolný (Prac.: KIT)
<b>Autor:</b>	Vimal Bhatia (Prac.: DěKFIM)
<b>Název zdroje:</b>	IEEE Photonics Journal
<b>Číslo/kód:</b>	2
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<b>e-ISBN:</b>	
<b>Ročník:</b>	15
<b>Strany:</b>	"Article number 7301807"
<b>Abstrakt orig.:</b>	<p>Visible light communication (VLC) has emerged as an eco-friendly and low-cost technology for the next-generation communication systems. However, for VLC systems, existing works report performance degradation due to light-emitting-diode (LED) non-linearity, multipath and relative mobility between the transmitter and the receiver. Additionally, multipath and user-mobility introduce inter-symbol-interference (ISI) and frequency-domain spreading which degrades the performance of VLC systems. For such scenarios, orthogonal time frequency space (OTFS) modulation is well-known to jointly addresses impairments due to multipath and user-mobility. To mitigate the distortions due to LED non-linearity, recently reproducing kernel Hilbert space (RKHS)-based random Fourier feature (RFF) techniques have emerged which alleviate the dependence on learning a dictionary and, outperforms classical polynomial based techniques. However, performance of these techniques is sensitive to the choice of kernel-width. Thus, for the OTFS systems impaired by LED non-linearity, this manuscript proposes a hyperparameter-free RFF-based post-distorter, under finite-memory budget without the need of explicitly tuning kernel-width for best performance. Analytical bounds for the bit-error-rate (BER) performance of the proposed post-distorter are presented, and validated via simulations over realistic VLC channels. From the results it is verified that the proposed receiver achieves better BER performance over uncompensated scenario and classical baseline polynomial based technique. © 2009-2012 IEEE.</p>
<b>Počet stran:</b>	7
<b>Médium:</b>	PO
<b>Odkazy:</b>	<a href="https://ieeexplore.ieee.org/document/10089468">https://ieeexplore.ieee.org/document/10089468</a>
<b>Hlavní klíč:</b>	bit error rate (BER); orthogonal time frequency space (OTFS); random Fourier feature (RFF); Visible light communication (VLC)
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	Hyperparameter-Free RFF Based Post-Distorter for OTFS VLC System
<b>Datum vložení:</b>	28.04.2023
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<b>Stav:</b>	Přijatý
<b>Literární forma:</b>	J_ČLÁNEK V ODBORNÉM PERIODIKU
<b>Rozšíření LiF:</b>	Jimp
<b>Titul (v originále):</b>	2pCIPr: A Two-Phase Clump Profiler for Segmentation of Cancer Cells in Fluorescence Microscopic Images
<b>Rok publikace:</b>	2023
<b>Autor:</b>	K. Roy (Prac.:)
<b>Autor:</b>	D. Banik (Prac.:)
<b>Autor:</b>	G.K. Chan (Prac.:)
<b>Autor:</b>	Ondřej Krejcar (Prac.: CZAV)
<b>Autor:</b>	Debotosh Bhattacharjee (Prac.: DěkfIM)
<b>Název zdroje:</b>	IEEE Transactions on Instrumentation and Measurement
<b>Místo publikace:</b>	Piscataway
<b>Číslo/kód:</b>	May
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<b>Vydavatel:</b>	IEEE
<b>Ročník:</b>	72
<b>Strany:</b>	"Article number: 5014914"
<b>Abstrakt orig.:</b>	<p>Cancer cell segmentation is challenging since they grow in tightly packed colonies (clumps), causing adjacent cells to overlap. In this work, we proposed an automated vision-based analysis framework: a two-phase clump profiler (2pCIPr) for the segmentation of cancer cells in fluorescence microscopy images. In the first phase, we proposed a deep learning (DL) network, Multiscale Cell-Net, for coarse segmentation. Another framework, multiscale region proposal network (MS-RPN), was simultaneously trained in parallel to Multiscale Cell-Net to generate seeds for each cell. The coarse segmentation map was unable to segment the complex clumps. We proposed a novel metric, the Irregularity factor (Iftr), to identify those complex clumps. Once identified, we mapped them with the seed points generated by MS-RPN. These seeds served as the initialization points for our proposed level-set framework: weighing repelling force embedded-level-set method (WRFe-LSM) which segments the identified complex clumps in the second phase of segmentation. The final segmentation map was generated with the segmented cells from the two phases. We conducted extensive experiments on our private dataset comprising images from four complex cancer cell lines and obtained an aggregated Jaccard index (AJI) of 76.6%, 72.9%, 75.5%, and 69.7% on HeLa, MDA-MB-468, MDA-MB-231, and T-47D, respectively. Furthermore, to show the generalization ability of 2pCIPr, we conducted comparative experiments on a publicly available hematoxylin-eosin (H&amp;E)-stained histopathological images dataset (MoNuSeg) and obtained an AJI of 66.2%. A detailed evaluation of segmentation performance on both the datasets shows that 2pCIPr is robust and effective. © 1963-2012 IEEE.</p>
<b>Počet stran:</b>	14
<b>Odkazy:</b>	<a href="https://ieeexplore.ieee.org/document/10130458">https://ieeexplore.ieee.org/document/10130458</a>
<b>Hlavní klíč:</b>	Cancer cells; deep learning (DL); fluorescence imaging; level-set method; mitotic catastrophe; segmentation
<b>Jazyk (originál):</b>	angličtina (eng)
<b>Titul anglicky:</b>	2pCIPr: A Two-Phase Clump Profiler for Segmentation of Cancer Cells in Fluorescence Microscopic Images
<b>Datum vložení:</b>	15.06.2023
<b>Financování:</b>	S -