Name of Journal: *Artificial Intelligence in Cancer*

Manuscript NO: 54872

Manuscript Type: ORIGINAL ARTICLE

Basic Study

Impact of blurs on machine-learning aided digital pathology image analysis

Maki Ogura, Tomoharu Kiyuna, Hiroshi Yoshida

Abstract

BACKGROUND

Digital pathology image (DPI) analysis has been developed by machine learning

18,600 Results Any time

Image analysis and machine learning in digital pathology ...

https://www.sciencedirect.com/science/article/pii/S1361841516301141

In spite of the reluctance thus far by the regulatory agencies to grant approval to whole **slide scanned images** for use for **primary diagnosis**, it is clear that the use of **computer aided analysis** with **digital pathology** will be part of clinical decision making in the near future.

Cited by: 243 **Author:** Anant Madabhushi, George Lee
Publish Year: 2016

Machine Learning Methods for Histopathological Image Analysis

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6158771

Feb 09, 2018 · **Machine** learning techniques often used in **digital pathology image analysis** are divided into supervised learning and unsupervised learning. The goal of supervised learning is to infer a function that can map the input images to their appropriate labels (e.g. cancer) well using training data.

Cited by: 134 **Author:** Daisuke Komura, Shumpei Ishikawa
Publish Year: 2018

Images of Impact Of Blurs On Machine-learning Aided Digital Path...

bing.com/images

See more images of Impact Of Blurs On Machine-learning Aided Digital Pathology Image Analysis

Introduction to Digital Image Analysis in Whole-slide ...

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6437786

Mar 08, 2019 · The ideal digital image analysis software should include **easy installation**, **user-friendly instructions** and **training**, **optimal speed** and capacity, rapid and **effective customer support**, and an intuitive interface that is easy to use. Important considerations for choosing **digital pathology image analysis** software are presented in Table 3.

Cited by: 9 **Author:** Famke Aeffner, Mark D Zarella, Nathan Buc...
Publish Year: 2019

Quantitative Assessment of the Effects of Compression on ...

https://ascopubs.org/doi/full/10.1200/CCI.19.00068

Quantitative Assessment of the Effects of Compression on Deep Learning in **Digital Pathology Image Analysis** Yijiang Chen, BS 1. x. ... our study and that by Zanjani et al 11 assessed the **impact** of lossy compression on DL, ... **Image analysis** and **machine** learning in **digital pathology**: Challenges and opportunities. Med **Image** Anal 33: ...

Author: Yijiang Chen, Andrew Janowczyk, Andr... **Publish Year:** 2020

Digital pathology and artificial intelligence - The Lancet ...

https://www.thelancet.com/journals/lanonc/article/...

Image analysis tools can automate and quantify with greater consistency and accuracy than **light microscopy**. **Computer-aided diagnosis** is widely used for oestrogen receptor, progesterone receptor, and HER2/neu **assessments** in breast cancer, Ki67 **assessment** in carcinoid tumours, as well as multiple other clinical and research stains.

Cited by: 21 **Author:** Muhammad Khalid Khan Niazi, Anil V Parw...
Publish Year: 2019

Introduction to Digital Image Analysis in Whole-slide ...

https://www.semanticscholar.org/paper/Introduction...

The advent of **whole-slide imaging in digital pathology** has brought about the advancement of **computer-aided examination** of tissue via **digital image analysis**. **Digitized slides** can now be easily annotated and **analyzed** via a variety of algorithms.

Pathology Image Analysis Using Segmentation Deep Learning ...

https://www.researchgate.net/publication/333714099...

Although there have been previous reviews on using **machine** learning methods in **digital pathology image analysis**, this is the first in-depth review of the applications of deep learning algorithms ...

Digital image analysis in breast pathology—from image ...

https://www.sciencedirect.com/science/article/pii/S1931524417302955

Machine Learning in Digital Pathology Image Analysis Recent breakthroughs in AI promise to fundamentally change the way we detect and treat **breast cancer** in the near future. The difference between AI, **machine learning**, and **deep learning** is not always obvious to nonexperts.

Cited by: 61 **Author:** Stephanie Robertson, Hossein Azizpour, H...
Publish Year: 2017

(PDF) Digital Pathology Image Analysis: Opportunities and ...

https://www.researchgate.net/publication/270392656...

Role of the **pathologist** in the **digital age**. While **image analysis methods** for **digital pathology** are rapidly finding application in the. clinic, both **imaging**, computer scientists and **pathologists** alike need to appreciate that the. primary purpose of these tools is to complement the role of the **pathologist**.

Author: Anant Madabhushi

Artificial Intelligence in Lung Cancer Pathology Image ...

https://www.mdpi.com/2072-6694/11/11/1673

Discussion and Conclusion: With the advance of technology, **digital pathology** could have great potential **impacts** in lung cancer patient care. We point out some promising future directions for **lung cancer pathology image analysis**, including **multi-task learning**, **transfer learning**, and model interpretation.

Cited by: 2 **Author:** Shidan Wang, Donghan M. Yang, Ruichen R...
Publish Year: 2019

Artificial Intelligence in Lung Cancer Pathology Image ...

https://www.mdpi.com/2072-6694/11/11/1673/htm

Currently, the limited capacity of **pathology image analysis** algorithms is creating a bottleneck in **digital pathology**, constraining the ability of this technology to have greater clinical **impact**. Recent developments in **pathology image analysis** [7 , 8] have led to new algorithms and software tools for clinical diagnosis and research into ...

Society of Toxicologic Pathology Digital Pathology and ...

https://journals.sagepub.com/doi/abs/10.1177/...

Society of Toxicologic **Pathology Digital Pathology** and **Image Analysis** Special Interest Group Article*: Opinion on the Application of Artificial Intelligence and **Machine Learning** to **Digital** Toxicologic **Pathology** ... Madabhushi, A, Lee, G. **Image analysis** and **machine learning** in **digital pathology**: ... Wang, DH, et al. Computer **aided analysis** of ...

Artificial intelligence in digital pathology — new tools ...

https://www.nature.com/articles/s41571-019-0252-y

The possibility of digitizing whole-slide images of tissue has led to the advent of artificial intelligence (AI) and machine learning tools in digital pathology, which enable mining of subvisual morphometric phenotypes and might, ultimately, improve patient management.

A Comprehensive Review for Breast Histopathology Image ...

https://arxiv.org/pdf/2003.12255

The survey of [9] reviews machine learning methods that are usually employed in histopathological image processing, such as segmentation, feature extraction, unsupervised learn-ing, and supervised learning. More than 130 papers about histopathological image analysis are summarized, but only five are about BHIA with ANNs.

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Image analysis and machine learning in digital pathology ...

https://www.sciencedirect.com/science/article/pii/S1361841516301141

While **digital pathology** has substantial implications for telepathology, second opinions, and education there are also huge research opportunities in **image computing** with this new source of "**big data**". It is well known that there is fundamental **prognostic data embedded in pathology images**.

Cited by: 243 **Author:** Anant Madabhushi, George Lee
Publish Year: 2016

How Artificial Intelligence Is Augmenting Digital Pathology

https://specialistdirectinc.com/digital-pathology-en/how-artificial-intelligence-is...

May 06, 2020 · The use of **AI in digital pathology** could save lives and improve patient care. It also enables real-time sharing of information and improves workflow efficiency. Plus, it eliminates manual or time-consuming tasks. Let's take a closer look at how **AI** is **augmenting digital pathology** and what to expect in the next few years. AI and Medical Image Analysis

Digital pathology and artificial intelligence - The Lancet ...

https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(19)30154-8/fulltext

In modern clinical practice, **digital pathology** has a crucial role and is increasingly a technological requirement in the scientific **laboratory** environment. The advent of **whole-slide imaging**, availability of faster networks, and cheaper storage solutions has made it easier for **pathologists** to manage **digital slide images** and share them for clinical use.

Cited by: 21 **Author:** Muhammad Khalid Khan Niazi, Anil V Pa...
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Deep learning shows the capability of high-level computer ...

https://www.nature.com/articles/s41374-020-0442-3

May 29, 2020 · Janowczyk A, Madabhushi A. Deep learning for **digital pathology image analysis**: a comprehensive tutorial with selected use cases. J Pathol Inform. 2016;7:29. Article

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May 06, 2020 · Let's take a closer look at how AI is augmenting **digital pathology** and what to expect in the next few years. AI and Medical **Image Analysis**. AI uses advanced **image analysis** algorithms to diagnose diseases. Pathologists can now share their findings and work together to detect the root cause of disease in real-time.