

provide access to a vast array of educational resources that can supplement traditional classroom learning. By engaging in self-paced learning and accessing multimedia content, students can develop a sense of competence, boost their self-efficacy, and improve their academic performance. E-learning through IT promotes adaptive learning strategies and empowers students to take control of their education [4].

IT plays a critical role in providing Yemeni university students with career guidance and exploration opportunities. Online career assessment tools, job portals, and professional networking platforms enable students to explore various career paths, identify their strengths and interests, and make informed decisions about their future. Access to digital resources for career planning enhances students' self-concept by aligning their academic pursuits with their career goals. IT-based career guidance equips students with the necessary skills and knowledge to adapt to the demands of the job market.

Conclusion

Utilizing Information Technology (IT) presents a significant opportunity to enhance the self-concept and adaptation of Yemeni university students. By leveraging online platforms for self-expression, virtual communities for social support, e-learning for academic development, and digital resources for career guidance, Yemeni universities can empower their students and facilitate their successful adaptation to the academic environment. IT-based interventions have the potential to strengthen students' self-concept, foster a sense of belongingness, and improve their overall well-being. Embracing IT in higher education settings in the Republic of Yemen can pave the way for a more supportive and empowering learning environment.

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EMPLOYING APERIO ALGORITHM PROGRAM IN HISTOLOGICAL CHANGE EXAMINATION

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Abstract: In this study report, we shed light on employing APERIO algorithm program in stomach tissue examination and it enables quantification of specific colors in tissue sections and provides automated digital image analysis that enhances performance monitoring and precise assessment of IHC staining. The program's benefits include reproducibility, efficiency, and increased sensitivity in detecting nuanced changes.

Key words: Aperio algorithm, medical, digital image, tissue examination.

Introduction

Aperio scan Scope™ program are used to quantify the amount of a specific colour in a tissue section. This system has a set of default input parameters which have been configured for brown color quantification in the three intensity ranges degrees which are weak positive, positive and strong positive [1]. This report aims this report aims to explore the advantages and applications of

employing Aperio scan Scope™ program in histopathological examination.

Results and discussion

A twenty adult healthy male albino mice distributed into two groups, The first group were fed strict Fiber diet, and control group were fed standard pellet (30% protein). Specimens of stomach transferred to 10% neutral buffered formalin for 24 hours in order to obtain paraffin section for H &E stain and immunohistochemical (Anoctamin1 protein). results analyzed by applying SPSS software .Procedure took place at laboratories of human Anatomy department, College of Medicine, AL-Nahrain University. Comparison between strict fiber diet animals group and Control group showed that there were highly significant differences ($P \leq 0.01$) between the two groups as it shows in tab.1 and fig.1 below.

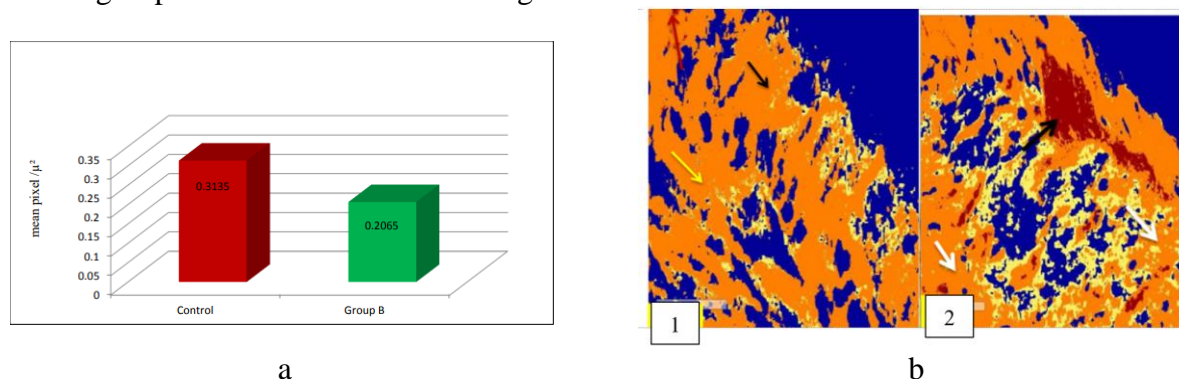


Fig 1. a. Compression in the mean value between groups, showing decrease expression of ANO1 in strict fiber diet compare to Control group . b. Muscularis externa layer of stomach section in group B,

Showing the intensity of the reaction at Muscularis externa ,tissue analyzed by aperio software showing orange discoloration in longitudinal muscular layer (Black arrow) and inner circular muscular layer (yellow arrow) distributed in muscularis externa layer of strict fiber diet 1 and control group 2. Anti- ANO1 expression, 40X.

The strict fiber diet animals reveals marked reduction in ANO1 expression that associated with adjacent neurons of myenteric plexus these result quantification of immunohistochemistry staining of ANO1 which is target protein that agree with study that reported a hypoplasia plus hypotrophy state of mucosa in malnourished rats [2]. The present study hypothesis that staining precision associated with these variables may be verified efficiently and effectively utilizing quantitative predefined algorithms in image tissue analysis software. Our data showed automated digital image analysis facilitated performance monitoring for IHC assays recognized for multiple antibodies, in case reliable and reproducible quantitative assessments of precision and sensitivity. In addition, automated analysis diminished need for skilled histopathology support to provide QA for IHC staining runs [3]. Finally, automated image analysis afforded a more sensitive means for detecting nuanced changes in IHC staining, especially at low staining levels at which the human eye tends to have difficulty in discriminating subtle variations in color intensity.

Conclusion

The utilization of Aperio Scan Scope™ program in histopathological examination offers several advantages and applications. The studies conducted on Aperio ScanScope™ consistently demonstrate its benefits, including improved efficiency and accuracy in tissue analysis compared to manual methods. The integration of machine learning algorithms within Aperio Scan Scope™ shows promise in automating analysis tasks and enhancing diagnostic accuracy. Additionally, Aperio Scan Scope™ facilitates the handling of large datasets and high-resolution images, promotes standardized evaluation, and enables collaboration among pathologists. Overall, Aperio has made significant contributions to the field of histopathological examination. Its advanced imaging, analysis, and data management features have revolutionized the way pathologists analyse and interpret tissue samples, leading to improved diagnostic accuracy and faster turnaround times.

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ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING ALGORITHMS FOR ENVIRONMENTAL MANAGEMENT STRATEGIES

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Abstract: In this study report, we shed light on the possibilities of the Artificial Intelligence application in the field of environment and climate change, as well as the help of machine learning algorithms in predicting climate change, determining optimal environmental management strategies and developing new energy-efficient systems.

Key words Artificial Intelligence, machine learning, ML algorithms, and environment

Introduction

During the past few decades, humankind has been facing growing environmental problems that require urgent solutions to improve the situation in the world. The necessity to employ new technologies, which could effectively deal with environmental threats, has come to the forefront. Artificial Intelligence (AI) is one of these technologies, providing extensive opportunities for solving environmental issues.

Results and discussion

Having analyzed vast datasets, AI algorithms enhance our understanding of climate patterns, enabling accurate predictions of extreme weather events, sea-level rise, and ecosystem shifts. Machine learning (ML) algorithms have all the possibilities to analyze large volumes of weather and climate data to predict future climate conditions. For example, DeepMind, a subsidiary of Google, has developed an Artificial Intelligence system that can predict wind energy distribution 36 hours ahead, allowing for the optimization of wind turbine use. As a part of the project in Burundi, Chad, and Sudan, based on the use of AI, the analysis of preceding changes in the environment is being conducted to provide forecasts of these changes in the future. At the same time Belarusian, specialists, together with their counterparts from the Arctic and Antarctic Research Institute (AARI), are set to develop a new system for long-term climate change prediction based on Artificial Intelligence.

Dr. Sergey Soldatenko, a member of AARI, a Doctor of Physics and Mathematics, and a professor, shared: “By applying artificial intelligence methods to analyze past and present climate system observations, we aim to construct a self-learning Earth system modeling system and utilize this system for ultra-long-term weather and climate forecasting.” AARI specialists and the Institute of Natural Resources Use of the National Academy of Sciences of Belarus will concentrate in their work on simulating the model of the climate conditions in the Union State territory over a 20-year time horizon. The outcomes of the developments are planned to be implemented in Roshydromet institutions. As Sergey Soldatenko elucidates, current traditional methods fall short in adequately considering hard-to-predict factors and sudden shifts in various aspects of Earth’s climate, which complicate weather forecasting from months to 20 years ahead. The scientist affirms that digital self-learning systems should address this issue.

Artificial intelligence also plays a crucial role in weather forecasting. With the help of AI, weather forecasts can be improved and the accuracy of predictions can be increased. For instance, The Weather Company used AI to forecast the weather on Florida’s beaches. They used data on air