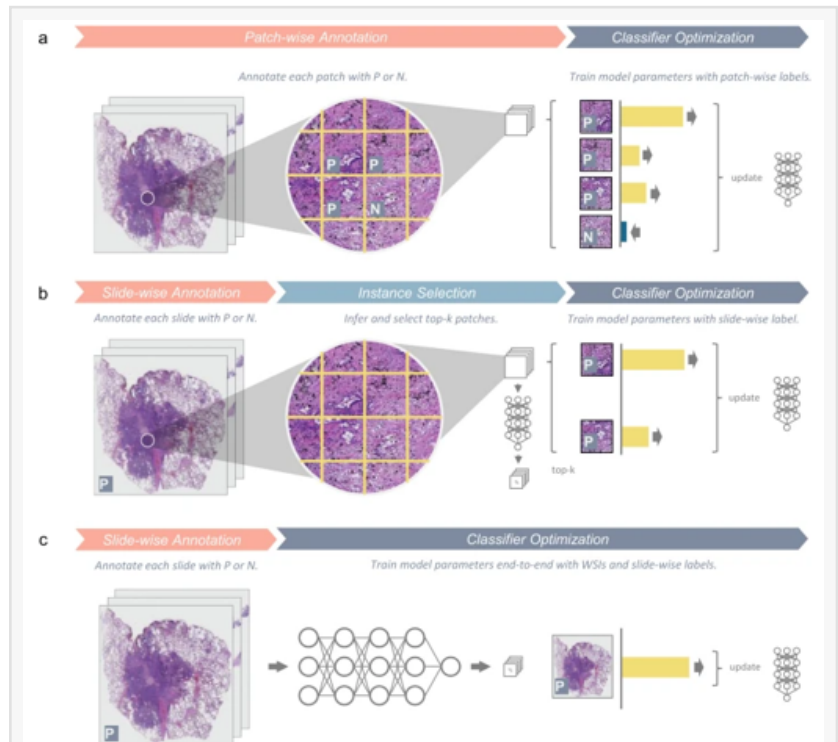


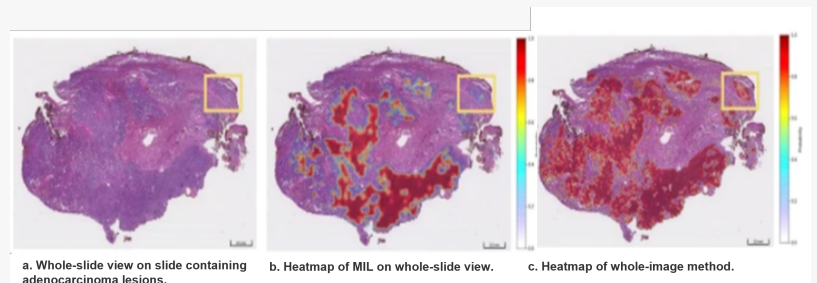
# aetherAI Annotation-free Whole-slide Training Approach to Pathological Classification Published in Nature Communications

*aetherAI's method for training neural networks on entire whole-slide images (WSIs) using only slide-level diagnoses.*

TAIPEI, TAIWAN, March 21, 2022 /EINPresswire.com/ -- aetherAI, Asia's leading medical image AI solution provider focused on digital pathology, announced that the results of its method for training neural networks on [entire whole-slide images](#) (WSIs) using only slide-level diagnoses has been published in the peer-reviewed Nature Communications (Impact IF:14.92). The method leverages the unified memory mechanism to overcome the memory constraints of computer accelerators and demonstrates higher classification performance than multiple-instance learning as well as strong localization results for small lesions through class activation mapping. Entitled "An annotation-free whole-slide training approach to pathological classification of lung cancer types using deep learning," the article can be accessed [online here](#).



Workflow overview of traditional patch-based method, MIL method, and aetherAI's proposed whole-slide training method.



Visualization of heatmaps generated by models.

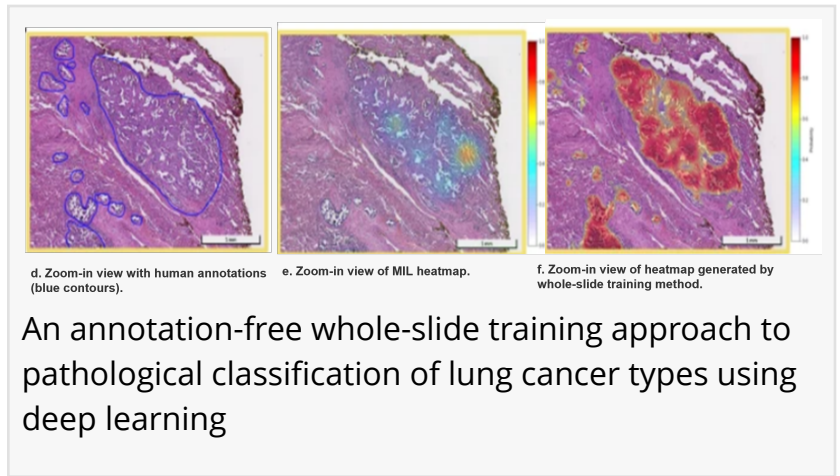
In collaboration with Taipei Medical University Hospital (TMUH), the experiments conducted on a data set of over 9,600 lung cancer WSIs reveal that aetherAI's proposed method achieves areas under the receiver operating characteristic curve of 0.9594 and 0.9414, respectively, for adenocarcinoma and squamous cell

carcinoma classification on the testing set.

“We are excited to see our team’s hard work materialize in a peer-reviewed publication in Nature

Communications,” said Joe Yeh, M.D., aetherAI founder and CEO. “The method we propose alleviates the burden of contouring and obtains benefits from scaling up training with numerous WSIs.” Deep learning for

digital pathology is hindered by the extremely high spatial resolution of WSIs. Most studies employ patch-based methods, which often require detailed annotation of image patches and typically involve laborious, free-hand contouring on WSIs.



An annotation-free whole-slide training approach to pathological classification of lung cancer types using deep learning

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*Joe Yeh, M.D., aetherAI Co-founder and CEO*

The joint study of aetherAI and TMUH has won the 18th National Innovation Award in 2021, an award created by the Institute for Biotechnology and Medicine Industry (IBMI) in Taiwan which has become the highest honor for biomedical technology corporations and research teams with strong R&D potential.

About aetherAI

Asia’s leading medical image AI solution provider, aetherAI is dedicated to providing cutting-edge solutions for digital pathology transformation, AI-powered diagnostic support

systems, and biopharma enterprise services. By leveraging state-of-the-art technologies, aetherAI aims to ease the burden on healthcare professionals and improve diagnostic imaging quality. At the forefront of digital pathology AI, aetherAI partners with top medical centers in the US, Taiwan, and Japan, including UPMC, National Taiwan University Hospital, and Kanazawa University. aetherAI is also a trusted collaborator for such BioPharma companies as Novartis Taiwan and ACT Genomics, and many more are working with us to accelerate AI applications for research efficiency.

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