

LUS Image Classification of Covid-19 and Pneumonia

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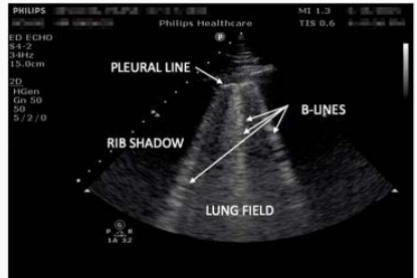
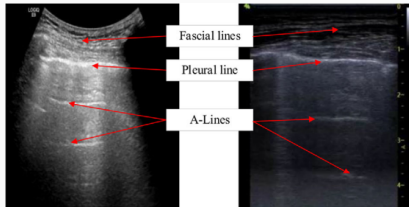
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Introduction

Lung ultrasound (LUS) images provide key diagnostic information by capturing different artifacts and structures in the lungs. Key elements in LUS images include:

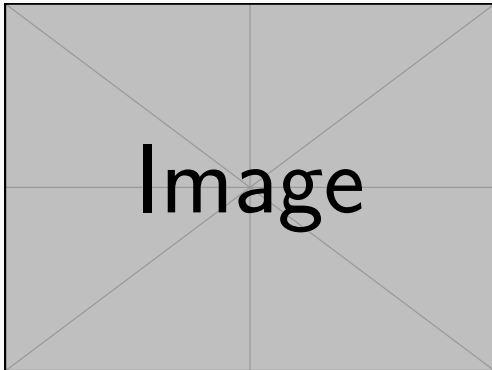
- **Pleural Line** – The bright, horizontal line at the top of the image, representing the lung's surface.
- **A-Lines** – Repetitive horizontal artifacts indicating normal aerated lungs.
- **B-Lines** – Vertical, hyperechoic (bright) lines extending to the bottom, associated with lung pathologies like pneumonia and pulmonary edema.

LUS Images



LUS Differences: COVID-19 vs. Pneumonia

Feature	COVID-19	Pneumonia
B-Lines	Scattered, widespread	Localized in one area
Pleural Line	Thick and uneven	Mostly normal
Lung Involvement	Both lungs (bilateral)	One lung (unilateral)

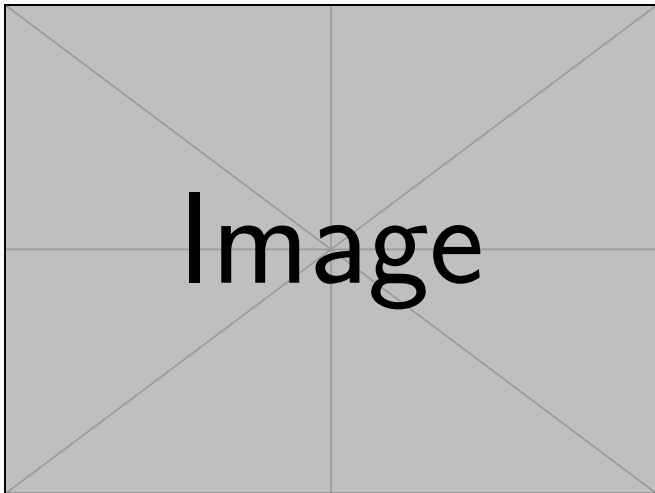


Main Content

Key Points



- First key point
- Second key point
- Third key point

Example Chart



Conclusion

Summary

-  Xing, Wenyu, et al. "Automatic detection of A-line in lung ultrasound images using deep learning and image processing." Medical physics 50.1 (2023): 330-343.
-  Baloesu, Cristiana, et al. "Automated lung ultrasound B-line assessment using a deep learning algorithm." IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control 67.11 (2020): 2312-2320.