Anatomy-Aware Self-Supervised Learning for Aligned Multi-Modal Medical Data
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What Happened in Different Modalities?
Both anatomical similarity and modality-specific attributes exist.

Directly applying dense contrastive methods to multi-modality data would be suboptimal: they simply pull corresponding regions closer in feature space, but modality-specific attributes incur a strong bias.

Our Method
In this work, we propose a novel anatomy-aware self-supervised learning method for multi-modality data. Spatial similarity distribution is explored to reflect the variations among anatomical structures.

Experiments
Two Datasets:
- US-SWE: ultrasound and shear wave elastography
- Fundus-FFA: color fundus and fundus fluorescein angiography for retinal disease

Transfer to Other Datasets:
- BUSI: breast ultrasound
- IChallenge-PM: color fundus for diagnosis of pathological myopia

Qualitative Results—Similarity Distribution
- Given the same anchor (yellow), our proposed method obtains more consistent similarity distribution across modals.
- Our method captures better anatomy consistency.