Breast Ultrasound Detection Based on Self-supervised Learning using Large-scale Datasets

Project Leaders: Xiangyu Xiong

Partner Organisations：杭州市第一人民医院

Advancements in deep learning and computer vision provide promising solutions for medical image analysis, potentially improving healthcare and patient outcomes. However, the prevailing paradigm of training deep learning models requires large quantities of labeled training data, which is both time-consuming and cost-prohibitive to curate for medical images. Self-supervised learning has the potential to make significant contributions to the development of robust medical imaging models through its ability to learn useful insights from copious medical datasets without labels.

Our research is driven by the goal of enhancing the accuracy of breast tumor detection and diagnosis tasks, using large ultrasound datasets with no annotated labels. By leveraging the power of self-supervised learning, we aim to develop robust computer-aided systems that can assist medical professionals in accurately identifying and classifying benign and malignant breast tumors, segmenting lesion regions.

