

## ABSTRACT

Pneumonia classification is critical for timely diagnosis and treatment planning. In this study, we propose a method for pneumonia classification using X-ray images. We employ knowledge distillation, with Inception V3 as the teacher model and ResNet 50 as the student model. By transferring insights from the teacher model, we enhance the student model's classification accuracy while keeping its size small for deployment in resource-constrained settings. We utilize soft targets, temperature scaling, feature mimicking, and attention transfer techniques to train the student model effectively. Experimental results show that our approach achieves comparable performance to the teacher model while significantly reducing model complexity. This work contributes to efficient and accurate pneumonia diagnosis using X-ray images, potentially improving patient outcomes in clinical practice.