**Train The Model**

1. An improved RetinaNet target detection model, AX-RetinaNet, is proposed for the automatic detection and identification of tea leaf diseases in natural scene images.
2. AX-RetinaNet uses an improved multiscale feature fusion module X-module to fuse the multiscale features of tea leaf diseases and obtain features of the diseases with rich semantic information.
3. AX-RetinaNet adds a channel Attention module, which adds adaptively optimized weights to each feature map channel to ensure that the network pays attention to useful feature information and reduces the interference of redundant information.
4. The data augmentation method is used to expand the number of training images to solve the problem of insufficient samples and improve the network detection and identification effect.
5. The method used in this study provides a basis for the automatic prevention and control of tea leaf diseases and is conducive to the rational use of pesticides.