

We introduce CASED, a novel curriculum sampling algorithm that facilitates the optimization of deep segmentation or detection models on datasets with extreme class imbalance. We evaluate the CASED learning framework on the task of lung nodule detection in chest CT. In contrast to two-stage solutions, wherein nodules candidates are first proposed by a segmentation model and then refined by a second detection stage, CASED improves the training of nodule segmentation models (e.g. UNet) to the point where only a trivial detection stage is needed to yield state of the art results. More information about this method will be made available in the conference proceeding of MICCAI 2017.

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