## Supplementary

**Table S1** YOLO v3 parameter settings for classification neural network training

| Parameter setting | Parameter interpretation |
|---|---|
| [YOLO] | the configuration of YOLO v3 |
| classes =1 | number of classes to detect (set 1 for detecting vitiligo only) |
| num =15 | the number of anchor boxes for a grid cell |
| jitter =0.3 | the parameter of data augmentation |
| ignore_thresh =0.5; truth_thresh =1 | the parameters of loss calculation |
| random =1 | the parameter of random multiscale training |

YOLO v3, You Only Look Once version 3.

**Table S2** Parameters for segmentation neural network training

| Network architecture | UNet, UNet++ | PSPNet |
|---|---|---|
| Dataset | Vitiligo dataset | |
| Input | PNG color images with 3 channels | |
| Output | Background and foreground (vitiligo) | |
| Input size | 128 | 256 |
| Batch size | 8 | 4 |
| Initial-learning-rate | 0.1 | 0.001 |
| Deep learning strategy | ReduceLROnPlateau: If the loss does not drop 10 times, change the learning-rate to learning-rate*0.1 | None |
| Nonlinear-activation-function | ReLU | |
| Normalization | Batch Norm | |
| Total Epochs | 500 | |
| Loss function | BCE with logistics | |
| Optimizer | Adam | |

PSPNet, Pyramid Scene Parsing Network; PNG, Portable Network Graphic.


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