

# Universal Semi-Supervised Learning for Medical Image Classification

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**Table 1.** The characteristics of evaluated skin datasets. **D** denotes "Dermoscopic" images and **C** denotes "Clinical" images. \* The definition of classes in Dermnet is different from the other three datasets, so the statistics of classes are not included.

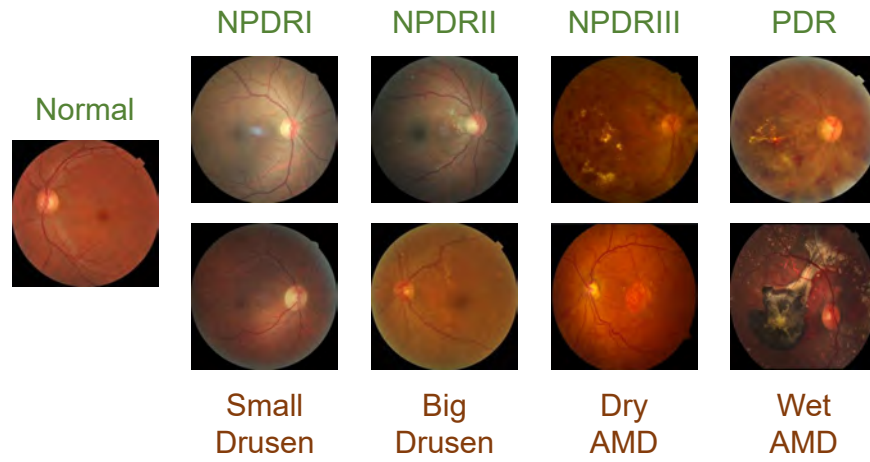
Dermatology					
	Labeled	Unlabeled			
Name	ISIC 2019	ISIC 2019	Derm7pt	PAD-UFES-20	Dermnet
Domain	D	D	D + C	C	C
No. of Images	2000	5803 + 1987	2013	3114	15557
No. of Classes	4	4 + 4	3 + 7	3 + 3	NA*

**Table 2.** The characteristics of evaluated fundus datasets.

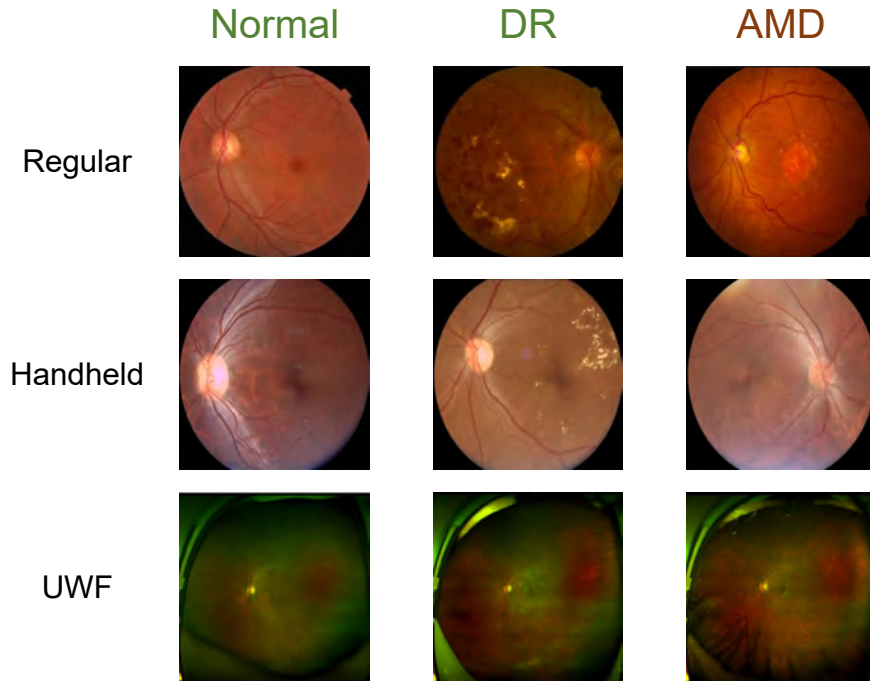
Ophthalmology				
	Labeled	Unlabeled		
Modality	Regular	Regular	In-hand	UWF
Target	DR	DR + AMD	DR + AMD	DR + AMD
No. of Images	5000	16445 + 6421	9823	5872
No. of Classes	5	5 + 4	5 + 4	5 + 4

**Table 3.** Hyper-parameter settings of the compared SSL methods. Hyper-parameters not specified are maintained consistent with their original implementations.

	PI	MT	VAT	PL	MM	FM	UASD	DS3L	MTCF	T2T	OM	CAFA
Initial LR	$3 \times 10^{-4}$											
Optimizer	SGD											
Coefficient	20	8	0.3	0.3	-	-	-	-	-	-	-	-
EMA decay	-	0.95	-	-	-	-	-	-	-	-	-	-
Threshold	-	-	-	0.95	-	0.95	-	-	-	-	0.95	-



**Fig. 1.** We take the diabetic retinopathy (DR) grading with 5 sub-classes (normal, NPDRI, NPDRII, NPDRIII, and PDR) as known classes and age-related macular degeneration (AMD) with 4 sub-classes (small drusen, big drusen, dry AMD, and wet AMD) as unknown classes.



**Fig. 2.** Collected fundus images from regular fundus cameras, handheld fundus cameras, and ultra-widefield (UWF) fundus imaging, which cover the field of view of 60°, 45°, and 200° respectively.