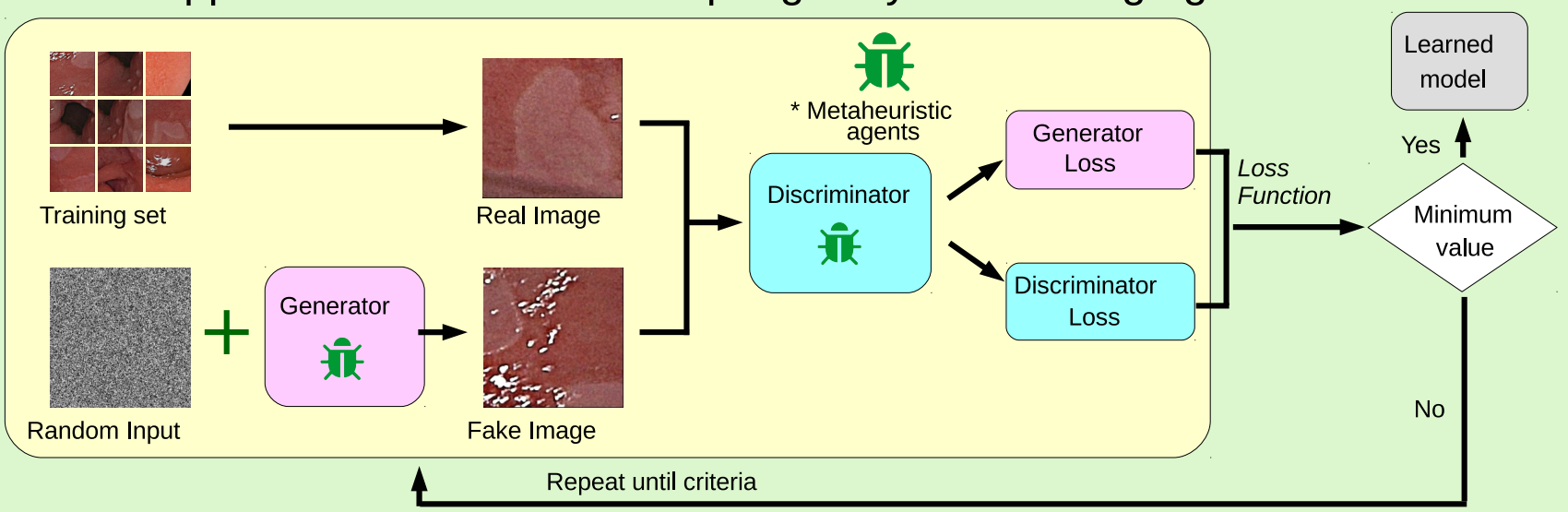
Fine-tuning Generative Adversarial Networks Using Metaheuristics Case Study on Barrett's Esophagus Identification

GAN hyperparameters are optimized through metaheuristic approaches for Barret's Esophagus syntethic image generation.

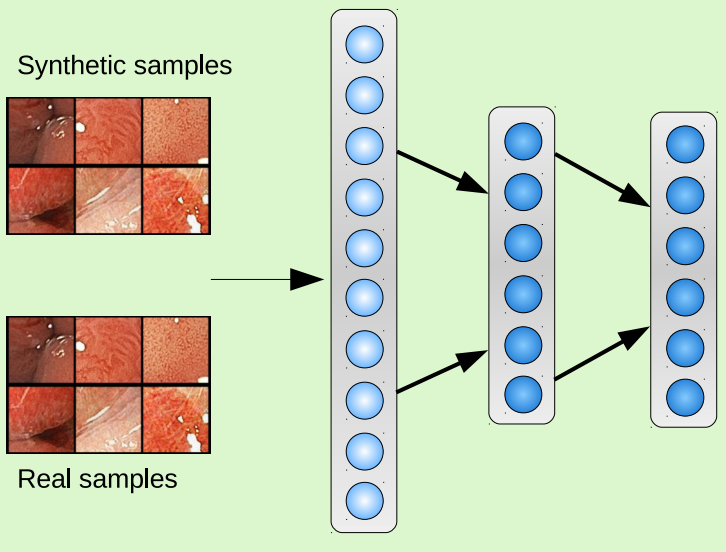


Data Augmentation

Metaheuristic optimization results (best - closest to 0):

		BSA	BSO	FA	FPA	JADE
Augsburg	**AD**	0.0049	0.0074	0.0025	0.0140	0.0053
	BE	0.0011	0.0045	0.0036	0.0057	0.0105
MICCAI	**AD**	0.0033	0.0074	0.0046	0.0037	0.0057
	BE	0.0045	0.0029	0.0010	0.0011	0.0018

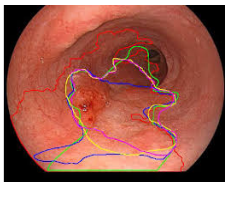
Real and synthetic images feed a DL model for BE identification.



Classification

Classification results (accuracy):

Augsburg		**MICCAI**	
No DA	GAN DA	No DA	GAN DA
0.73	0.90	0.82	0.93



Luis A. de Souza Jr. et al., Fine-tuning Generative Adversarial Networks Using Metaheuristics Case Study on Barrett's Esophagus Identification. Bildverarbeitung für die Medizin, 2021.