

FissionFusion: Fast Geometric Generation and Hierarchical Souping for Medical Image Analysis

Supplementary material

Table 1: Ablation study exploring the Performance comparison of different combinations. (GS - Grid search for model souping, GoU - Greedy of Uniform , GoG - Greedy of Greedy), Bold numbers mean best and underlined are the second best

Model	Method	CIFAR10 (Acc.) \uparrow	CIFAR100 (Acc.) \uparrow	APTOS (F1) \uparrow	HAM10000 (Recall) \uparrow	RSNA (F1) \uparrow	CheXpert (AUC) \uparrow
ResNet50	GS+HS(GoU)	<u>0.9777</u>	0.8434	0.6553	0.6589	0.9474	0.8194
	GS+HS(GoG)	0.9771	0.8409	0.7045	0.6071	0.9444	0.8444
	FGG+ UniformSoup	0.9218	0.8076	0.5912	0.6070	0.9104	0.7313
	FGG + GreedySoup	0.9776	0.8466	0.7172	0.6614	0.9518	0.8488
	FGG+HS(Aug@top)	0.9769	0.8410	0.7118	0.6317	0.9444	0.8444
DeiT-S	GS+HS(GoU)	<u>0.9887</u>	0.8975	0.6797	0.6713	0.9499	0.8609
	GS+HS(GoG)	0.9886	0.8957	0.6990	0.6487	0.9530	0.8707
	FGG+ UniformSoup	0.9309	0.8509	0.3067	0.1429	0.3781	0.7199
	FGG + GreedySoup	0.9895	0.9003	0.6828	0.6833	0.9529	0.8653
	FGG+HS(Aug@top)	0.9892	0.8946	0.6741	0.6487	0.9503	0.8691

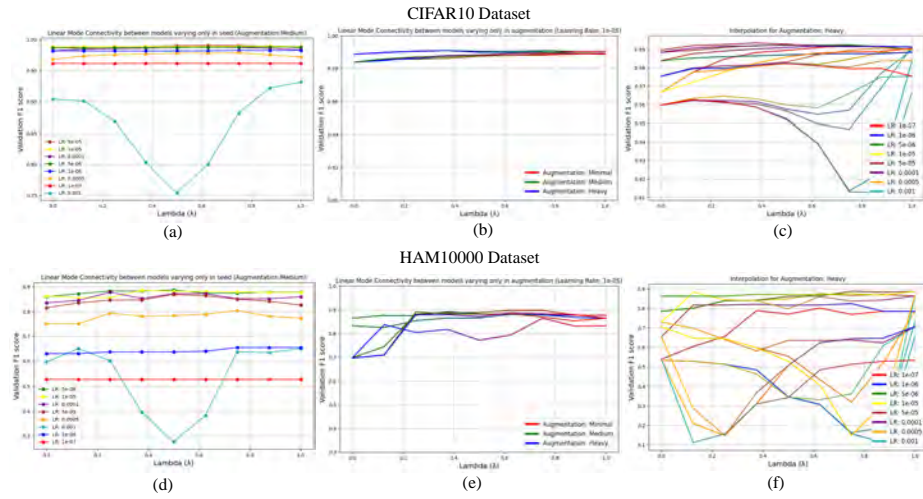


Fig. 1: Hyperparameter Analysis using Linear Mode Connectivity (LMC) ($\theta = \lambda \cdot \theta_A + (1 - \lambda) \cdot \theta_B$), where θ_A and θ_B differ only in one hyperparameter. (a) and (d) LMC between models varying only in seed. (b) and (e) LMC between models varying only in augmentation. (c) and (f) LMC between models varying only in learning rate.