

Additional experiments

Table 1: Real data - Full data sets. Accuracy (in %) on test samples. FedAvg and SCAFFOLD are not personalised FL approaches but stand for well-known FL benchmarks.

	CIFAR-10		CIFAR-100	
(# clients b , # classes per client S)	(100, 2)	(100, 5)	(100, 5)	(100, 20)
Local learning only	89.79	70.68	75.29	41.29
FedAvg (McMahan et al., 2017)	42.65	51.78	23.94	31.97
SCAFFOLD (Karimireddy et al., 2020)	37.72	47.33	20.32	22.52
LG-FedAvg (Liang et al., 2019)	84.14	63.02	72.44	38.76
Per-FedAvg (Fallah et al., 2020)	82.27	67.20	72.05	52.49
L2GD (Hanzely and Richtárik, 2020)	81.04	59.98	72.13	42.84
APFL (Deng et al., 2021)	83.77	72.29	78.20	55.44
DITTO (Li et al., 2021)	85.39	70.34	78.91	56.34
FedRep (Collins et al., 2021)	87.70	75.68	79.15	56.10
FedAvg + fine-tuning (FT)	85.63	71.32	79.03	56.19
FedSOUL (this paper)	91.12	79.48	79.56	59.73

Table 2: Real data - Full data sets using Motley experimental design for the cross-device setting. Accuracy (in %) on test samples.

	EMINIST	StackOverflow
Local learning only	93.6	6.20
FedAvg (McMahan et al., 2017)	85.2	26.9
FedAvg + fine-tuning (FT)	98.9	28.2
SCAFFOLD (Karimireddy et al., 2020)	82.5	25.7
DITTO (Li et al., 2021)	98.8	28.4
FedRep (Collins et al., 2021)	99.1	28.8
FedSOUL (this paper)	99.0	29.1

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