

Table 1: Framework Summary (▼: Oblivious Inference, ▲: Outsourced Inference, □: Outsourced Training, ■: Private Training)

Scene	Framework	Reference	Year	Publication	CCF	Privacy Service	Trunc. & Wrap	Bitwidth	B/QNN	Poly.Approx.	CMP	Num. Method	Offline/Online	HE SIMD	Dyna. Weights	GPU	Optimize Arch.	Compiler	Datasets	GC/GMW	OT	SS	HE
Pure-LHE	BatchCrypt	[1]	2020	USENIX	A	■	●	○	○	○	○	○	●	○	○	○	○	○	FMNIST, CIFAR-10, LSTM	○	○	○	Paillier
Pure-HE (LHE)	Hercules	[2]	2022	IEEE TDSC	A	■	○	○	○	○	○	○	●	●	—	○	●	●	MNIST, FMNIST, CIFAR-10, ImageNet	○	○	●	MCKKS
non-colluding MPC	PVD-FL	[3]	2022	IEEE TIFS	A	□	○	L	○	○	●	○	●	●	○	○	○	○	MNIST, Thyroid, Breast cancer, German credit	○	○	○	SHE
Server/Client	Cheetah	[4]	2022	USENIX	A	▲	●	L	●	●	●	I	●	●	○	○	●	○	ResNet50, DenseNet121	●	●	●	LWE, RLWE, VOLE OT

References

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- [2] G. Xu, X. Han, S. Xu, T. Zhang, and H. Li, “Hercules: Boosting the performance of privacy-preserving federated learning,” *IEEE Transactions on Dependable and Secure Computing*, 2022.
- [3] J. Zhao, H. Zhu, F. Wang, R. Lu, and Z. Liu, “PVD-FL: A privacy-preserving and verifiable decentralized federated learning framework,” *IEEE Transactions on Information Forensics and Security*, 2022.
- [4] Z. Huang, W. Lu, C. Hong, and J. Ding, “Cheetah: Lean and fast secure Two-Party deep neural network inference,” in *31st USENIX Security Symposium (USENIX Security 22)*, pp. 1161–1178, USENIX, 2022.