联邦学习中的通信优化

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摘要

随着机器学习的不断发展，机器学习所需要的数据量也不断增加，但客户对于数据隐私的需要，使得机器学习所需的数据获取难度很高，联邦学习试图在保护用户数据的同时，建立出能满足用户需求的模型。但大规模的联邦学习训练对带宽要求极高，对于个人设备，高昂的通信成本更是限制了复杂模型的使用，因此，提高联邦学习中客户端与服务器端的通信效率极为重要。本文总结了在联邦学习中常用的通信优化方法。

1 联邦学习的介绍

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2 梯度压缩

针对

2.1 Gradient quantization

Gradient quantization 的思路主要是 xxx

2.2 Gradient sparsification

Gradient sparsification 的思路主要是 xxx

	Works
Gradient quantization	Wen et al. [1] Seide et al. [2] Zhou et al. [3]
Gradient sparsification	Storm [4] Dryden et al. [5] Aji & Heafielf [6] Chen et al. [7]

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