

Recommendation

ITU-T M.3387 (03/2024)

SERIES M: Telecommunication management, including
TMN and network maintenance

Telecommunications management network

Management requirements for federated machine learning systems

ITU-T M-SERIES RECOMMENDATIONS

Telecommunication management, including TMN and network maintenance

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Recommendation ITU-T M.3387

Management requirements for federated machine learning systems

Summary

Recommendation ITU-T M.3387 is applicable to the architecture design, research, and development of federated machine learning models (FMLMs). Data privacy and information security pose significant challenges to the big data and artificial intelligence (AI) community as these communities are increasingly under pressure to adhere to regulatory requirements. Many routine operations in big data systems and applications, such as merging user data from various sources to build a machine learning model is considered to be illegal under the current regulatory frameworks.

The purpose of the federated machine learning (FML) is to provide a viable solution that empowers machine learning applications to utilize data in a distributed manner. In an FML framework, the data owners do not exchange raw data directly and do not allow any party to infer the private information of other parties. In order to facilitate the construction and use of FMLMs and improve the quality of the FML service, Recommendation ITU-T M.3387 specifies the management requirements for the federated machine learning systems (FMLs), including the functional architecture of FMLs, as well as the requirements of the basic management domain, model management domain, and data management domain.

History *

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Federated machine learning service, federated machine learning system, management requirement.

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The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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