Special Section on "Federated learning for personalized recommendation of consumer electronics"

Theme:

Due to the advances in machine learning (ML), recommendation systems are being used these days to suggest consumer electronics to the users. The existing recommendation systems are trained from the patterns observed from a wide variety of customers. Even though the existing recommendation systems provide useful recommendations to the majority of the customers, some of the customers may have different needs and requirements when compared to the majority of the customers. A machine learning model that identifies the individual preferences of the customers is need of the hour.

Federated learning (FL) is a recent advancement in machine learning family. In FL, instead of transferring all the data from individual devices to the central location to train the ML model, the computing itself is executed on the individual models. The parameters obtained by executing the ML model are then sent to the central server for global training of the ML model without compromising on the sensitive information being exposed. As the machine learning models are trained on local devices in the FL, the personal preferences of the users can be easily identified. Once the personal preferences of the users are identified, the users can be provided with personalized recommendations of consumer electronics as per the individual tastes of the customer. In this way FL has an immense potential in providing personalized recommendation to the users.

Topics of interest in this Special Section include (but are not limited to):

- Federated learning for personalized recommendation system.
- Blockchain with federated learning for privacy preservation of customers in personalized recommendation system.
- Federated learning integrated with edge computing for personalized recommendation system.
- Big data analytics for federated learning for personalized recommendation system.
- 5G and beyond integrated with federated learning for personalized recommendation system.
- Federated learning with blockchain to prevent fake recommendations.
- Sentiment analysis integrated with federated learning for personalized recommendations.

Important dates:

- End of submission of Manuscripts: **April 30, 2023**
- Expected publication date (tentative): March 2024

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Instructions for authors:

Manuscripts should be prepared following guidelines at: https://ctsoc.ieee.org/publications/ieee-transactions-on-consumer-electronics.html and must be submitted online following the IEEE Transactions on Consumer Electronics instructions: https://ctsoc.ieee.org/publications/ieee-transactions-on-consumer-electronics.html. During submission, the Special Section on "**Federated learning for personalized recommendation of consumer electronics**" should be selected.

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