

Student/Master Project: Task-oriented dynamic computation offloading among multiple mobile users and multiple edge servers

Description:

The 6G wireless edge network has attracted attention from both academia and industry, which will continue to support what has been promised in 5G. The variety and complexity of edge tasks brings new challenges in offloading, driving the development of task-oriented dynamic computation offloading and distributed intelligence for edge automation in mobile edge computing (MEC) [1,2,3,4]. This project lies in this area and aims to design communication-efficient distributed learning algorithms for 6G wireless edge networks.

Prerequisites:

- Good at mathematical modeling
- Experience in programming skills including Python, C++, MATLAB, etc.
- Experience in machine learning techniques such as neural networks, deep learning, etc.
- Interested in wireless edge networks, communication networks, task offloading mechanisms, etc.

Contact:

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References:

[1] J. Praveen, et al. Enabling All In-Edge Deep Learning: A Literature Review. IEEE Access (2023)

[2] M. Hu et al. Learning driven computation offloading for asymmetrically informed edge computing. IEEE Transactions on Parallel and Distributed Systems 30.8 (2019): 1802-1815

[3] L. Huang et al. Multi-server multi-user multi-task computation offloading for mobile edge computing networks. Sensors 19.6 (2019): 1446

[4] D.-J. Han et al. Fedmes: Speeding up federated learning with multiple edge servers. IEEE Journal on Selected Areas in Communications 39.12 (2021): 3870-3885