

CALL FOR PAPERS
IEEE Internet of Things Journal Special Issue on
Tiny Machine Learning in Internet of Unmanned Aerial Vehicles

With the rapid development of ubiquitous networks and smart devices, artificial intelligence based Unmanned Aerial Vehicles (UAVs) has drawn more and more attention. The rise in popularity of Deep Neural Networks (DNNs) has spawned a research effort to deploy various kinds of DNNs models on vehicles initially, which can not only accomplish complicated vehicular tasks, but also enable the construction of intelligent vehicular networks. Despite the promising prospects, how to train and run DNNs on resource-limited and hardware-constrained UAVs still faces huge challenges.

A number of approaches have emerged to reduce the computational costs of training DNNs and pursue a desired trade-off between accuracy and latency. Data quantization is another significant technique that enables on-device light DNNs. According to distinct quantization targets, quantization methods can be roughly divided into two major categories: inference quantization and training quantization. Inference quantization aims to quantize weight and/or activation to accelerate the forward pass. While training quantization needs to further quantize the gradient to accelerate the whole training process. This special issue invites original and breakthrough research in the field of tiny machine learning for Internet of UAVs. Topics include, but are not limited to, the following:

- Compact DNNs Architectures for Tiny Machine Learning in Internet of UAVs
- Data Quantization for Tiny Machine Learning in Internet of UAVs
- Fast Convolution Algorithms for Tiny Machine Learning in Internet of UAVs
- Design of Lightweight Networks for Tiny Machine Learning in Internet of UAVs
- Resource Management Models based on Tiny Machine Learning in Internet of UAVs
- Security and Privacy Protect based on Tiny Machine Learning in Internet of UAVs
- Real-Time Applications based on Tiny Machine Learning in Internet of UAVs
- Testing and Evaluation Tools for Tiny Machine Learning in Internet of UAVs
- Tiny Machine Learning based Platforms in Internet of UAVs
- The Future of Tiny Machine Learning in Internet of UAVs: Challenges and Open Issues

Important Dates:

Submission Deadline: December 1st, 2023

First Review Due: January 15th, 2024

Revision Due: March 1st, 2024

Second Review Due/Notification: April 1st, 2024

Final Manuscript Due: April 15th, 2024

Publication Date: May 2024

Submission:

The original manuscripts to be submitted need to follow the guidelines described at: <http://ieeetj.org/guidelinesfor-authors/>, which should not be concurrently submitted for publication in other venues. Authors should submit their manuscripts through the IEEE Manuscript Central at: <https://mc.manuscriptcentral.com/iot>. The authors must select as "SI: Tiny Machine Learning in Internet of Unmanned Aerial Vehicles " when they reach the Article Type" step in the submission process.

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