



Special Session

“Machine Learning for Localization and Navigation”

Abstract

Machine learning (ML) and deep learning (DL) achieved remarkable success recently. ML/DL helps to comprehensively interpret complex situations learning from given data implicitly rather than relying on empirical models. In positioning, ML/DL has achieved remarkable results in many application areas, regularly outperforming model-based estimation. Specifically, ML approaches have great potential to effectively cope with typical challenges of localization in indoor spaces, including non-line-of-sight problems, device heterogeneity, and environmental variations and different movement types. Non-linear function approximators can capture those relationships that are difficult to be modeled directly.

This special session focuses on DL and ML in indoor positioning and we welcome submissions that use new data-driven methods for navigation and tracking with RF, IMU and other sensors, propose hybrid systems that combine DL/ML with conventional tracking filters, deal with adaptation of trained DL/ML models to new and unseen circumstances such as environment or motion type changes or heterogenous sensor systems.

Keywords

Data-driven multimodal sensor fusion; uncertainty estimation; machine learning; non-line-of-sight positioning; hybrid tracking filters.

Technical Program Committee

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Important Dates

- Submission deadline: 15 May 2021
- Notification of acceptance: 21 June 2021

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