



## Deep Learning Approaches for Urban Sensing Data Analytics

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### Message from the Guest Editors

Deep Learning (DL) has attracted burgeoning research interest in the past few years, due to its strength in automatic learning of hierarchical features from big data. At the same time, different types of remote sensing, such as satellite and airborne imagery and video systems, as well as ground-level mobile mapping systems (e.g., mobile laser scanning systems) have been widely used in urban environment monitoring and analytics at various scales. In addition, existing sensing infrastructures (e.g., CCTV) can be harnessed to extract new information (e.g., pedestrian/vehicle moving patterns) with the help of DL. Although DL is rapidly gaining popularity in remote sensing (Zhang et al., 2016), we are facing numerous challenges in applying it to urban sensing data, such as noisy training datasets, incompatible spatial scales, dense mixture of image objects, short update intervals, onerous hyper parameter tuning, and limited prior knowledge. All these challenges are requiring us to develop special DL approaches for urban sensing data analytics.





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