

工程与应用

RF室内定位指纹库空间相关生成算法

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摘要 基于定位指纹库的模式识别算法是目前基于网络结构(如WLAN)定位技术研究的热点。该技术的关键是根据不同AP(Access Point, AP)的RSSI值建立有效的定位指纹数据库。传统的方法只是直接在定位区域采集样本,不考虑RSSI的空间相关特性,导致离线训练阶段工作量较大。利用RSSI的空间相关特性,提出了通过对神经网络空间插值建立定位指纹数据库的方法。实验结果表明该方法不但提高了定位精度,而且节省了训练时间,是一种高效的、易于实现的定位指纹数据库生成方法。

关键词 [室内定位](#) [射频指纹](#) [对传神经网络](#) [相关模型](#)

分类号

New algorithm based-on spatial correlation for yielding fingerprints database of RF indoor localization

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Abstract

Pattern recognition algorithm based on location fingerprints database in RF has become one of the research hotspots in architecture-based network localization technology recently. A key issue of this technology is how to generate the database of "location fingerprinting" by using RSSI values received from the different access pointers. Without utilizing the spatial correlation feature of RSSI, the conventional method only samples the field directly, and results in large volumes of offline workload. In this paper a new method is proposed to generate the database by using Counter Propagation Networks (CPN) interpolation, which utilizes the spatial correlation feature of RSSI. The result of the experiment indicates that the method not only can achieve more accurate estimation, but also can greatly reduce the workload and save the training time. This method will make the fingerprinting technology more efficient and easier to implement.

Key words [indoor localization](#) [RF fingerprinting](#) [Counter Propagation Networks \(CPN\)](#) [correlation model](#)

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