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## **Indoor Localization Framework with Wi-Fi Fingerprinting**

Indoor localization through Wi-Fi fingerprinting requires a large number of fine-grained data samples. This study presents a data acquisition and indoor localization framework that collects crowd-sourced Wi-Fi received signal strength data in a metropolitan high-rise building and predicts location through Wi-Fi fingerprinting. The framework consists of a server and an Android application and was tested at NYIT for data collection for two weeks in December 2016. The dataset was pre-processed and analyzed through linear support vector machine to test location prediction accuracy. Various feature selection schemes were compared for their location prediction accuracy. We show that a small subset of features suffices to provide high location prediction accuracy. The average location prediction accuracy increases from 83% to 100% when time features are considered comparing to using only spatial features.