Machine Learning Aspects of the MyShake Global Smartphone Seismic Network

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This article gives an overview of machine learning (ML)applications in MyShake—a crowdsourcing global smartphone seismic network.

本文敘述了MyShake(一個眾包的全球智能手機地震網絡）中的機器學習（ML）應用。

Algorithms from classification, regression,and clustering are used in the MyShake system to address various problems, such as artificial neural network (ANN) and convolutional neural network (CNN) to distinguish earthquake motions,spatial-temporal clustering using **density-based spatial clustering of applications with noise (DBSCAN)** to detect earthquakes from phone aggregated information,and random forest regression to learn from existing physics-based relationships.

在MyShske系統中使用了分類、回歸和分群的演算法解決各種問題，例如人工神經網路(ANN)和卷積神經網路(CNN)可用來區分地震運動，使用聚類演算法(DBSCAN)從電話並集的訊息中監測地震，並進行隨機森林回歸以從現有的基礎物理關係中學習進行，從而進行時空分群，

Beyond existing efforts, this article also presents a vision of the role of ML in some new directions and challenges.

除了現有的努力，本文還提出了ML在某些新方向及挑戰中扮演的角色的願景。

Using MyShake as an example, this article demonstrates the promising combination of ML and seismology.

以MyShake為例，本文顯示了ML和地震學有希望的組合。