

A computer-implemented method for predicting subfield soil properties for an agricultural field comprises: receiving satellite remote sensing data that includes a plurality of images capturing imagery of an agricultural field in a plurality of optical domains; receiving a plurality of environmental characteristics for the agricultural field; generating a plurality of preprocessed images based on the plurality of satellite remote sensing data and the plurality of environmental characteristics; identifying, based on the plurality preprocessed images, a plurality of features of the agricultural field; generating a subfield soil property prediction for the agricultural field by executing at least one machine learning model on the plurality of features; transmitting the subfield soil property prediction to an agricultural computer system.