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from keras.models import Model
from keras.layers import Input, Dense, Dropout, Flatten, concatenate
from keras.applications.resnet50 import ResNet50

def build_full_mixed_model(input_shape_img, input_shape_osm, number_of_repeats):
  model_cnn = ResNet50(input_tensor=input_shape_img, weights='imagenet', include_top=False)
  img_features = Flatten()(model_cnn.output)

  osm_features_input = Input(shape=input_shape_osm)
  osm_features = Dense(256, activation='relu')(osm_features_input)
  osm_features = Dropout(0.5)(osm_features)

  top = concatenate([osm_features, img_features])
  for i in range(0,number_of_repeats):
    top = Dense(256, activation='relu')(top)
    top = Dropout(0.5)(top)
  top = Dense(1, activation='sigmoid')(top)

  model = Model(inputs=[model_cnn.input, osm_features_input], outputs=top)
  return model
```