

The benefit of using an AutoKeras derived model is that AutoKeras is capable of finding a model that’s nearly just as accurate as a model developed from scratch, if not more accurate. The idea being to reuse models that have already been designed to solve a problem, and to avoid having to ‘reinvent the wheel,’ so-to-speak. With minimal effort, the AutoKeras derived model archives a very similar test accuracy to my homemade model. Therefore, using AutoKeras models is a much more efficient way of developing a machine learning model without having to make it from scratch.

<i>Homemade Model Accuracy: 92.17%</i>	<i>AutoKeras Model Accuracy: 91.20%</i>
<i>Homemade Model Architecture</i>	<i>AutoKeras Model Architecture</i>
<div> <div> <div>conv2d_input</div> <div>InputLayer</div> </div> <div>↓</div> <div> <div>conv2d</div> <div>Conv2D</div> </div> <div>↓</div> <div> <div>batch_normalization</div> <div>BatchNormalization</div> </div> <div>↓</div> <div> <div>activation</div> <div>Activation</div> </div> <div>↓</div> <div> <div>conv2d_1</div> <div>Conv2D</div> </div> <div>↓</div> <div> <div>batch_normalization_1</div> <div>BatchNormalization</div> </div> <div>↓</div> <div> <div>activation_1</div> <div>Activation</div> </div> <div>↓</div> <div> <div>conv2d_2</div> <div>Conv2D</div> </div> <div>↓</div> <div> <div>batch_normalization_2</div> <div>BatchNormalization</div> </div> <div>↓</div> </div> <div>Left Image ⇔ Top</div> <div> <div> <div>activation_2</div> <div>Activation</div> </div> <div>↓</div> <div> <div>conv2d_3</div> <div>Conv2D</div> </div> <div>↓</div> <div> <div>batch_normalization_3</div> <div>BatchNormalization</div> </div> <div>↓</div> <div> <div>activation_3</div> <div>Activation</div> </div> <div>↓</div> <div> <div>flatten</div> <div>Flatten</div> </div> <div>↓</div> <div> <div>dense</div> <div>Dense</div> </div> <div>↓</div> <div> <div>batch_normalization_4</div> <div>BatchNormalization</div> </div> <div>↓</div> <div> <div>activation_4</div> <div>Activation</div> </div> <div>↓</div> <div> <div>dropout</div> <div>Dropout</div> </div> <div>↓</div> <div> <div>dense_1</div> <div>Dense</div> </div> <div>↓</div> </div> <div>Right Image ⇔ Bottom</div>	<div> <div> <div>input_1</div> <div>InputLayer</div> </div> <div>↓</div> <div> <div>cast_to_float32</div> <div>CastToFloat32</div> </div> <div>↓</div> <div> <div>expand_last_dim</div> <div>ExpandLastDim</div> </div> <div>↓</div> <div> <div>normalization</div> <div>Normalization</div> </div> <div>↓</div> <div> <div>conv2d</div> <div>Conv2D</div> </div> <div>↓</div> <div> <div>conv2d_1</div> <div>Conv2D</div> </div> <div>↓</div> </div> <div>Left Image ⇔ Top</div> <div> <div> <div>max_pooling2d</div> <div>MaxPooling2D</div> </div> <div>↓</div> <div> <div>dropout</div> <div>Dropout</div> </div> <div>↓</div> <div> <div>flatten</div> <div>Flatten</div> </div> <div>↓</div> <div> <div>dropout_1</div> <div>Dropout</div> </div> <div>↓</div> <div> <div>dense</div> <div>Dense</div> </div> <div>↓</div> <div> <div>classification_head_1</div> <div>Softmax</div> </div> <div>↓</div> </div> <div>Right Image ⇔ Bottom</div>