Accuracy

Precision

Recall

Auc

Confusion Matrix

Loss

Accuracy

Confusion Matrix

	Not-Mixed	Well-Mixed
Not-Mixed	305	0
Well-Mixed	1	294

Loss

Accuracy

Confusion Matrix

Loss

Accuracy

Confusion Matrix

Loss

Accuracy

Confusion Matrix

Loss

Accuracy

Confusion Matrix

Loss

Training Loss
Validation Loss

Accuracy

Training Accuracy
Validation Accuracy

True: Well-Mixed
Pred: Not-Mixed
Prob: 0.04

True: Well-Mixed
Pred: Not-Mixed
Prob: 0.08

True: Not-Mixed
Pred: Not-Mixed
Prob: 0.04

True: Well-Mixed
Pred: Not-Mixed
Prob: 0.06

True: Well-Mixed
Pred: Not-Mixed
Prob: 0.07

True: Well-Mixed
Pred: Not-Mixed
Prob: 0.07

True: Well-Mixed
Pred: Not-Mixed
Prob: 0.07

True: Well-Mixed
Pred: Not-Mixed
Prob: 0.07

True: Well-Mixed
Pred: Not-Mixed
Prob: 0.06

True: Not-Mixed
Pred: Not-Mixed
Prob: 0.06

Best Model CNN Architecture for Mixing Classification

Input
Shape: (None, 64, 64, 3)

Conv2D_1
Filters: 16, Kernel: (3, 3)

BatchNormalization_1

MaxPooling2D_1
Pool: (2, 2)

ResidualBlock_1

MaxPooling2D_2
Pool: (2, 2)

InceptionModule

MaxPooling2D_3
Pool: (2, 2)

Flatten

Dense_1
Units: 128

BatchNormalization_2

Dropout
Rate: 0.3

Output
Units: 1

InputLayer   Conv2D   BatchNormalization   MaxPooling2D
Custom   Flatten   Dense   Dropout
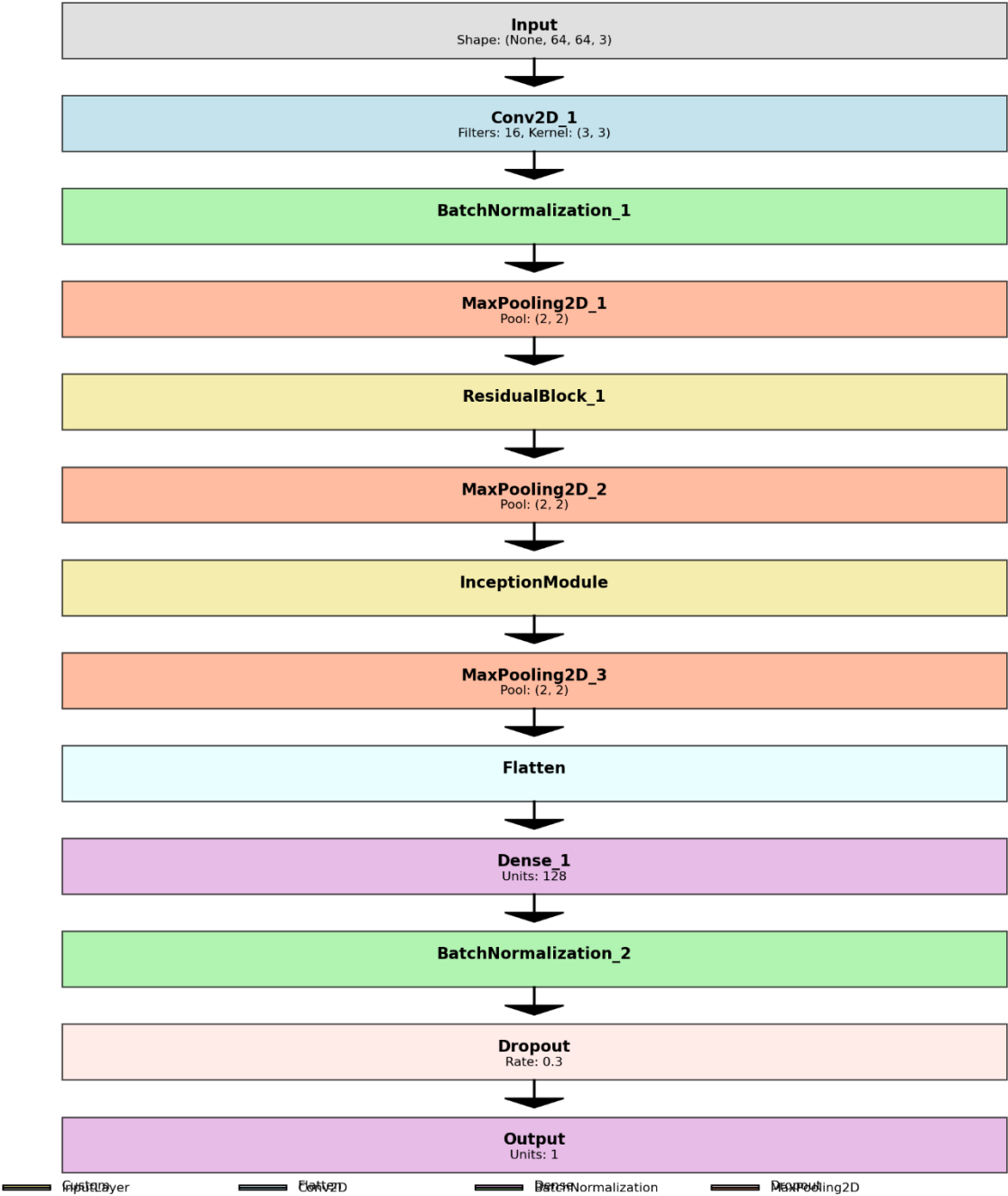
Inception Module Architecture

Input

1x1 Conv reduce

1x1 Conv reduce

MaxPool

1x1 Conv

3x3 Conv

5x5 Conv

1x1 Conv

Concatenate along channel dimension
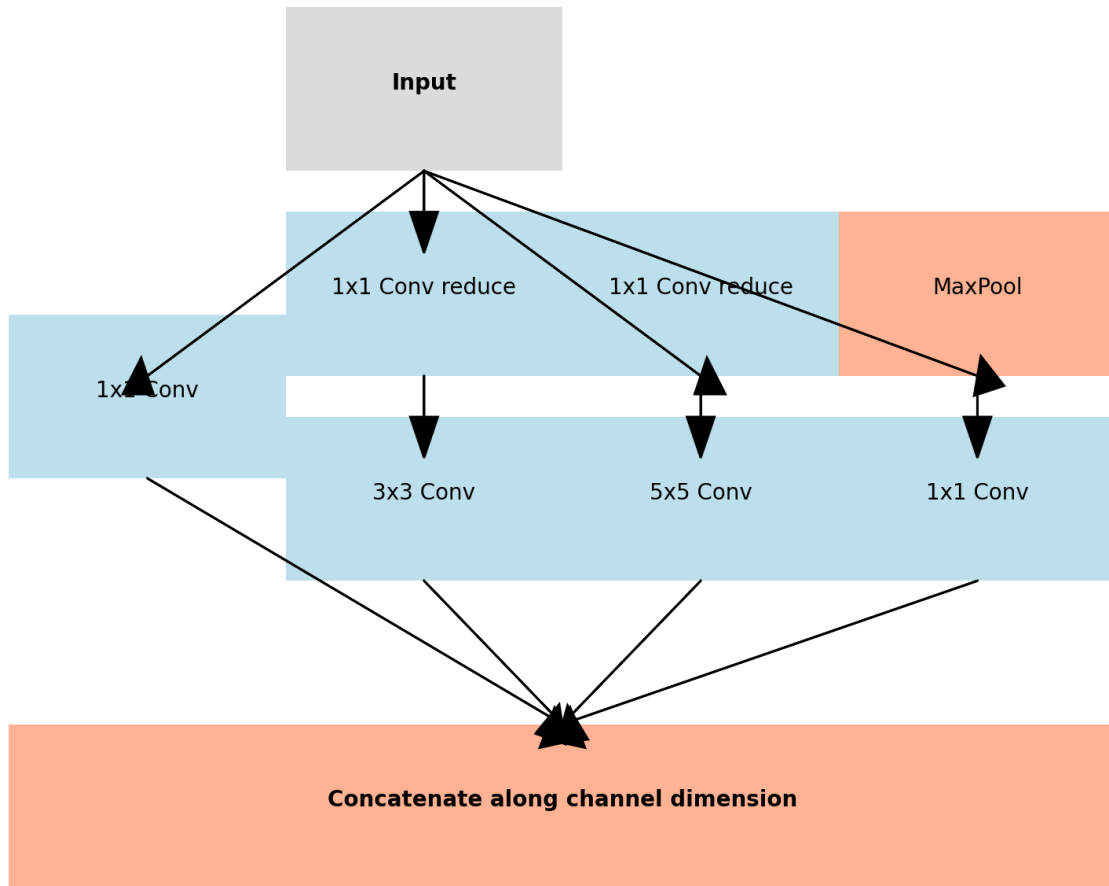
Residual Block Architecture

Input

Conv2D + BatchNorm + ReLU

Identity or 1x1 Conv

Conv2D + BatchNorm

Add

ReLU