AI Team Report

(Strabismus Detection)

Data

Amount of Data

Normal	Strabismus
500	500

Preprocessing

- Data Validation
- Data Selection
- Crop Data

Amount of Data

	Normal	Strabismus	All
Train	400	400	800
Validation	50	50	100
Test	50	50	100

Model Code

```
model = tf.keras.Sequential([
    tf.keras.layers.Rescaling(1./255),
    tf.keras.layers.Conv2D(filters = 64, kernel_size = 3, activation="relu"),
    tf.keras.layers.MaxPooling2D(),
    tf.keras.layers.Conv2D(filters = 96, kernel_size = 3, activation="relu"),
    tf.keras.layers.MaxPooling2D(),
    tf.keras.layers.Dropout(0.5),
    tf.keras.layers.Conv2D(filters = 128, kernel_size = 3, activation="relu"),
    tf.keras.layers.MaxPooling2D(),
    tf.keras.layers.Flatten(),
    tf.keras.layers.Dense(units = 256, activation ='relu'),
    tf.keras.layers.Dropout(0.3),
    tf.keras.layers.Dense(units = 64, activation ='relu'),
    tf.keras.layers.Dropout(0.5),
    tf.keras.layers.Dense(units = 1, activation='sigmoid')
])
```

Confusion Matrix

Predicted			
True		Normal	Strabismus
	Normal	40	7
	Strabismus	9	42

Results

	Normal
Accuracy	83.6%
Precision	85.1%
Recall	81.6%
F1	83%

```
- 7s 673ms/step - loss: 0.6884 - accuracy: 0.5658 - precision: 0.5587 - recall: 0.8179 - val_loss: 0.6933 - val_accuracy: 0.4796 - val_precision: 0.0000e+00 - val_recall: 0.0
- 7s 577ms/step - loss: 0.6955 - accuracy: 0.5369 - precision: 0.5467 - recall: 0.6838 - val_loss: 0.6928 - val_accuracy: 0.4796 - val_precision: 0.0000e+00 - val_recall: 0.0
- 6s 573ms/step - loss: 0.6887 - accuracy: 0.6018 - precision: 0.7303 - recall: 0.3814 - val_loss: 0.6891 - val_accuracy: 0.7449 - val_precision: 0.9643 - val_recall: 0.5294
- 7s 624ms/step - loss: 0.6684 - accuracy: 0.6306 - precision: 0.6463 - recall: 0.6529 - val_loss: 0.6562 - val_accuracy: 0.6837 - val_precision: 0.6852 - val_recall: 0.7255
- 6s 585ms/step - loss: 0.6663 - accuracy: 0.7045 - precision: 0.7361 - recall: 0.6804 - val_loss: 0.6394 - val_accuracy: 0.7143 - val_precision: 0.7018 - val_recall: 0.7843
- 7s 680ms/step - loss: 0.6274 - accuracy: 0.6685 - precision: 0.6588 - recall: 0.7629 - val_loss: 0.6042 - val_accuracy: 0.8061 - val_precision: 0.8077 - val_recall: 0.8235
- 7s 576ms/step - loss: 0.5453 - accuracy: 0.7622 - precision: 0.7955 - recall: 0.7354 - val_loss: 0.5100 - val_accuracy: 0.8163 - val_precision: 0.8367 - val_recall: 0.8039
- 7s 672ms/step - loss: 0.5305 - accuracy: 0.7730 - precision: 0.7957 - recall: 0.7629 - val_loss: 0.5429 - val_accuracy: 0.8367 - val_precision: 0.8302 - val_recall: 0.8627
- 7s 580ms/step - loss: 0.4986 - accuracy: 0.7856 - precision: 0.7810 - recall: 0.8213 - val_loss: 0.4571 - val_accuracy: 0.8265 - val_precision: 0.8400 - val_recall: 0.8235
- 6s 581ms/step - loss: 0.4949 - accuracy: 0.7946 - precision: 0.8444 - recall: 0.7457 - val_loss: 0.4708 - val_accuracy: 0.7857 - val_precision: 0.8261 - val_recall: 0.7451
- 7s 598ms/step - loss: 0.4763 - accuracy: 0.7928 - precision: 0.7803 - recall: 0.8419 - val_loss: 0.4322 - val_accuracy: 0.8571 - val_precision: 0.8776 - val_recall: 0.8431
- 6s 578ms/step - loss: 0.4193 - accuracy: 0.8108 - precision: 0.8298 - recall: 0.8041 - val_loss: 0.3689 - val_accuracy: 0.8163 - val_precision: 0.8235 - val_recall: 0.8235
- 7s 610ms/step - loss: 0.4074 - accuracy: 0.8198 - precision: 0.8550 - recall: 0.7904 - val_loss: 0.3683 - val_accuracy: 0.8571 - val_precision: 0.8491 - val_recall: 0.8824
- 6s 582ms/step - loss: 0.3613 - accuracy: 0.8541 - precision: 0.8723 - recall: 0.8454 - val_loss: 0.3604 - val_accuracy: 0.8367 - val_precision: 0.8571 - val_recall: 0.8235
```