Rete: Alexnet.

Dataset: ORIGA-light (168 glaucoma / 480 normali)

Split: 0.8 training / 0.2 validation (640 elementi)

Augmentation: Null

Options:

```
    'MiniBatchSize',10 , ...
    'MaxEpochs',10, ...
    'InitialLearnRate', 0.0001, ...
    'Shuffle','every-epoch', ...
    'ValidationData',testAug, ...
    'ValidationFrequency',*valFrequency, ...
    'Verbose',false, ...
    'Plots','training-progress'

*valFrequency = floor(numel(augimdsTrain.Files)/miniBatchSize);
```

Accuracy: 0. 7734

Test:

Glaucoma

Im0643_g_ORIGA 0.1703 0.8297
Im0644_g_ORIGA 0.1926 0.8074
Im0645_g_ORIGA 0.8373 0.1627 T
Im0646_g_ORIGA 0.8223 0.1777 T
Im0647_g_ORIGA 0.6499 0.3501 T

Normali

Im0478_ORIGA 0.5245 0.4755
Im0479_ORIGA 0.0647 0.9353 T
Im0480_ORIGA 0.8528 0.1472
Im0481_ORIGA 0.7681 0.2319
Im0482_ORIGA 0.0517 0.9483 T

Rete: Alexnet.

Dataset: ORIGA-light (168 glaucoma / 480 normali)

Split: 0.8 training / 0.2 validation (640 elementi)

Augmentation:

```
pixelRange = [-30 30];
scaleRange = [0.9 1.1];
angleRange = [-45 45];
imageAugmenter = imageDataAugmenter( ...
    'RandXReflection',true, ...
    'RandXTranslation',pixelRange, ...
    'RandYTranslation',pixelRange, ...
    'RandXScale',scaleRange, ...
    'RandYScale',scaleRange, ...
    'RandRotation', angleRange);
```

Options:

```
    'MiniBatchSize',10 , ...
    'MaxEpochs',10, ...
    'InitialLearnRate', 0.0001, ...
    'Shuffle','every-epoch', ...
    'ValidationData',testAug, ...
    'ValidationFrequency',*valFrequency, ...
    'Verbose',false, ...
    'Plots','training-progress'

*valFrequency = floor(numel(augimdsTrain.Files)/miniBatchSize);
```

Accuracy: 0.7891

Test:

Glaucoma

Im0643_g_ORIGA	0.1873	0.8127	
Im0644_g_ORIGA	0.4416	0.5584	
Im0645_g_ORIGA	0.4719	0.5281	
Im0646_g_ORIGA	0.3754	0.6246	
Im0647_g_ORIGA	0.4781	0.5219	

Normali

Im0478_ORIGA	0.4150	0.5850 T	/
Im0479_ORIGA	0.1984	0.8016 T	/
Im0480_ORIGA	0.3868	0.6132 T	/
Im0481_ORIGA	0.5570	0.4430	/
Im0482_ORIGA	0.0671	0.9329 T	/

Rete: Alexnet.

Dataset: ORIGA-light (168 glaucoma / 480 normali)

Split: 0.8 training / 0.2 validation (640 elementi)

Augmentation:

```
      pixelRange = [-30 30];
      scaleRange = [0.9 1.1];
      angleRange = [-90 90];
      imageAugmenter = imageDataAugmenter( ...
    'RandXReflection',true, ...
    'RandXTranslation',pixelRange, ...
    'RandYTranslation',pixelRange, ...
    'RandXScale',scaleRange, ...
    'RandYScale',scaleRange, ...
    'RandRotation', angleRange);
```

Options:

```
    miniBatchSize = 10;
valFrequency = floor(numel(augimdsTrain.Files)/miniBatchSize);
options = trainingOptions('sgdm', ...
    'MiniBatchSize',miniBatchSize, ...
    'MaxEpochs',14, ...
    'InitialLearnRate',0.00008, ...
    'Shuffle','every-epoch', ...
```

```
    'ValidationData',testAug, ...
    'ValidationFrequency',valFrequency, ...
    'Verbose',false, ...
    'Plots','training-progress')
```

Accuracy: 0.7734

Test:
Glaucoma
Im0643_g_ORIGA 0.2756 0.7244
Im0644_g_ORIGA 0.3130 0.6870
Im0645_g_ORIGA 0.4507 0.5493
Im0646_g_ORIGA 0.3634 0.6366
Im0647_g_ORIGA 0.2947 0.7053

Normali
Im0478_ORIGA 0.5284 0.4716
Im0479_ORIGA 0.1984 0.8016 T
Im0480_ORIGA 0.2945 0.7055 T
Im0481_ORIGA 0.3005 0.6995 T
Im0482_ORIGA 0.1388 0.8612 T

Rete: Alexnet.

Dataset: ORIGA-light (168 glaucoma / 480 normali)

Split: 0.8 training / 0.2 validation (640 elementi)

Augmentation:

```
      pixelRange = [-30 30];
scaleRange = [0.9 1.1];
angleRange = [-20 20];
imageAugmenter = imageDataAugmenter( ...
    'RandYReflection',true, ...
    'RandXTranslation',pixelRange, ...
    'RandYTranslation',pixelRange, ...
    'RandXScale',scaleRange, ...
    'RandYScale',scaleRange, ...
    'RandRotation', angleRange);
```

Options:

```
miniBatchSize = 10;
valFrequency = floor(numel(augimdsTrain.Files)/miniBatchSize);
options = trainingOptions('sgdm', ...
    'MiniBatchSize',miniBatchSize, ...
    'MaxEpochs',9, ...
    'InitialLearnRate',0.000095, ...
    'Shuffle','every-epoch', ...
    'ValidationData',testAug, ...
    'ValidationFrequency',valFrequency, ...
    'Verbose',false, ...
    'Plots','training-progress')
```

Accuracy: 0.7422

Test:
Glaucoma
Im0643_g_ORIGA 0.1543 0.8457
Im0644_g_ORIGA 0.3319 0.6681
Im0645_g_ORIGA 0.4127 0.5873
Im0646_g_ORIGA 0.3254 0.6746
Im0647_g_ORIGA 0.4432 0.5568

Normali
Im0478_ORIGA 0.4370 0.5630 T
Im0479_ORIGA 0.1213 0.8787 T
Im0480_ORIGA 0.4561 0.5439 T
Im0481_ORIGA 0.5203 0.4797 T
Im0482_ORIGA 0.0444 0.9556 T

Rete: Alexnet.

Dataset: ORIGA-light (168 glaucoma / 480 normali)

Split: 0.8 training / 0.2 validation (640 elementi)

Augmentation:

```
pixelRange = [-30 30];
scaleRange = [0.9 1.1];
angleRange = [-20 20];
imageAugmenter = imageDataAugmenter( ...
    'RandYReflection',true, ...
    'RandXTranslation',pixelRange, ...
    'RandYTranslation',pixelRange, ...
    'RandRotation', angleRange);
```

Options:

```
    miniBatchSize = 20;
valFrequency = floor(numel(augimdsTrain.Files)/miniBatchSize);
options = trainingOptions('sgdm', ...
    'MiniBatchSize',miniBatchSize, ...
    'MaxEpochs',20, ...
    'InitialLearnRate',0.0001, ...
    'Shuffle','every-epoch', ...
    'ValidationData',testAug, ...
    'ValidationFrequency',valFrequency, ...
    'Verbose',false, ...
    'Plots','training-progress');
```

Accuracy: 0.7656

Test:
Glaucoma

Im0643_g_ORIGA 0.1035 0.8965
Im0644_g_ORIGA 0.1903 0.8097
Im0645_g_ORIGA 0.6077 0.3923 T
Im0646_g_ORIGA 0.2905 0.7095
Im0647_g_ORIGA 0.3736 0.6264

Normali
Im0478_ 0. ORIGA 0.5348 0.4652
Im0479_ORIGA 0.0432 0.9568 T
Im0480_ORIGA 0.3808 0.6192 T
Im0481_ORIGA 0.4276 0.5724 T
Im0482_ORIGA 0.0456 0.9544T

Rete: Alexnet.

Dataset: ORIGA-light (168 glaucoma / 480 normali)

Split: 0.8 training / 0.2 validation (163 + 187 elementi)

Augmentation:

```
pixelRange = [-30 30];
scaleRange = [0.9 1.1];
angleRange = [-20 20];
imageAugmenter = imageDataAugmenter( ...
    'RandYReflection',true, ...
    'RandXTranslation',pixelRange, ...
    'RandYTranslation',pixelRange, ...
    'RandXScale',scaleRange, ...
    'RandYScale',scaleRange, ...
    'RandRotation', angleRange);
```

Options:

```
miniBatchSize = 20;
valFrequency = floor(numel(augimdsTrain.Files)/miniBatchSize);
options = trainingOptions('sgdm', ...
    'MiniBatchSize',miniBatchSize, ...
    'MaxEpochs',10, ...
    'InitialLearnRate',0.0001, ...
    'Shuffle','every-epoch', ...
    'ValidationData',testAug, ...
    'ValidationFrequency',valFrequency, ...
    'Verbose',false, ...
    'Plots','training-progress');
```

Accuracy 0.6571
Test:
Glaucoma
Im0646_g_ORIGA 0.4308 0.5692
Im0647_g_ORIGA 0.7008 0.2992 T
Im0648_g_ORIGA 0.2533 0.7467
Im0649_g_ORIGA 0.4308 0.5692
Im0650_g_ORIGA 0.3328 0.6672

Normali
Im0478_ 0. ORIGA 0.6051 0.3949
Im0479_ORIGA 0.1533 0.8467 T
Im0480_ORIGA 0.5847 0.4153
Im0481_ORIGA 0.6370 0.3630
Im0482_ORIGA 0.0866 0.9134 T

Rete: Alexnet.

Dataset: ORIGA-light (168 glaucoma / 480 normali)

Split: 0.8 training / 0.2 validation (640 elementi)

Augmentation:

```
pixelRange = [-10 10];
scaleRange = [0.9 1.1];
angleRange = [-30 30];
imageAugmenter = imageDataAugmenter( ...
    'RandYReflection',true, ...
    'RandXTranslation',pixelRange, ...
    'RandYTranslation',pixelRange, ...
    'RandXScale',scaleRange, ...
    'RandYScale',scaleRange, ...
    'RandRotation', angleRange);
```

Options:

```
    miniBatchSize = 20;
valFrequency = floor(numel(augimdsTrain.Files)/miniBatchSize);
options = trainingOptions('sgdm', ...
    'MiniBatchSize',miniBatchSize, ...
    'MaxEpochs',30, ...
    'InitialLearnRate',0.0001, ...
    'Shuffle','every-epoch', ...
    'ValidationData',testAug, ...
    'ValidationFrequency',valFrequency, ...
    'Verbose',false, ...
    'Plots','training-progress');
```

Accuracy: 0.7891

Test:
Glaucoma
Im0646_g_ORIGA 0.4308 0.5692
Im0647_g_ORIGA 0.7008 0.2992 T
Im0648_g_ORIGA 0.2533 0.7467
Im0649_g_ORIGA 0.4308 0.5692
Im0650_g_ORIGA 0.3328 0.6672
Normali
Im0478_ 0. ORIGA 0.6051 0.3949
Im0479_ORIGA 0.1533 0.8467 T
Im0480_ORIGA 0.5847 0.4153
Im0481_ORIGA 0.6370 0.3630

Im0482_ORIGA 0.0866 0.9134 T

Rete: Alexnet.

Dataset: ORIGA-light (168 glaucoma / 480 normali)

Split: 0.8 training / 0.2 validation (640 elementi)

Augmentation:

```
pixelRange = [-10 10];
scaleRange = [0.9 1.1];
angleRange = [-30 30];
imageAugmenter = imageDataAugmenter( ...
    'RandYReflection',true, ...
    'RandXTranslation',pixelRange, ...
    'RandYTranslation',pixelRange, ...
    'RandXScale',scaleRange, ...
    'RandYScale',scaleRange, ...
    'RandRotation', angleRange);
augimdsTrain = augmentedImageDatastore(inputSize(1:2),trainImgs, ...
    'DataAugmentation',imageAugmenter);
```

Options:

```
miniBatchSize = 20;
valFrequency = floor(numel(augimdsTrain.Files)/miniBatchSize);
options = trainingOptions('sgdm', ...
    'MiniBatchSize',miniBatchSize, ...
    'MaxEpochs',80, ...
    'InitialLearnRate',0.0001, ...
    'Shuffle','every-epoch', ...
    'ValidationData',testAug, ...
    'ValidationFrequency',valFrequency, ...
    'Verbose',false, ...
    'Plots','training-progress');
```

Accuracy: 0.7266

Test:
Glaucoma
Im0646_g_ORIGA 0.2575 0.7425
Im0647_g_ORIGA 0.3444 0.6556
Im0648_g_ORIGA 0.0468 0.9532
Im0649_g_ORIGA 0.2035 0.7965
Im0650_g_ORIGA 0.0327 0.9673
Normali
Im0478_ 0. ORIGA 0.6051 0.3949
Im0479_ORIGA 0.8246 0.1754
Im0480_ORIGA 0.3897 0.6103 T
Im0481_ORIGA 0.3897 0.6103 T
Im0482_ORIGA 0.0008 0.9992 T