



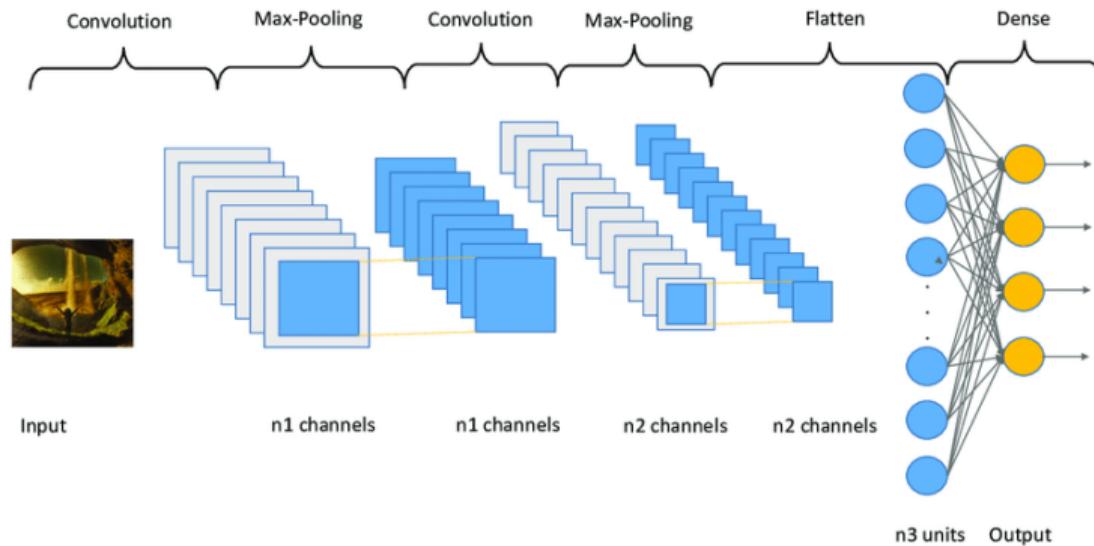
# Retina VesselNet

Giovanni Gamaliel López Padilla

5 de junio de 2022

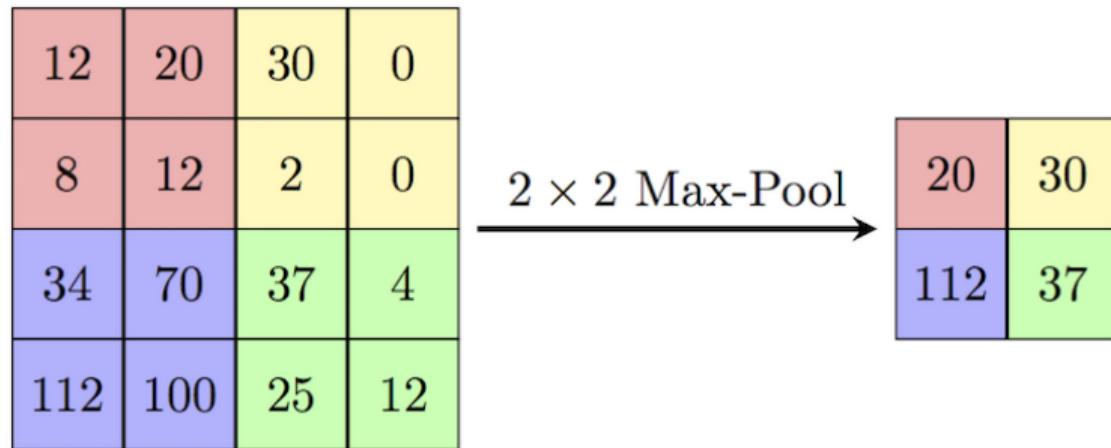
# Introduction

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**Figura 1:** Convolutional neural networks.<sup>1</sup>

# Introduction



**Figura 2:** Max pooling layer.

# Introduction

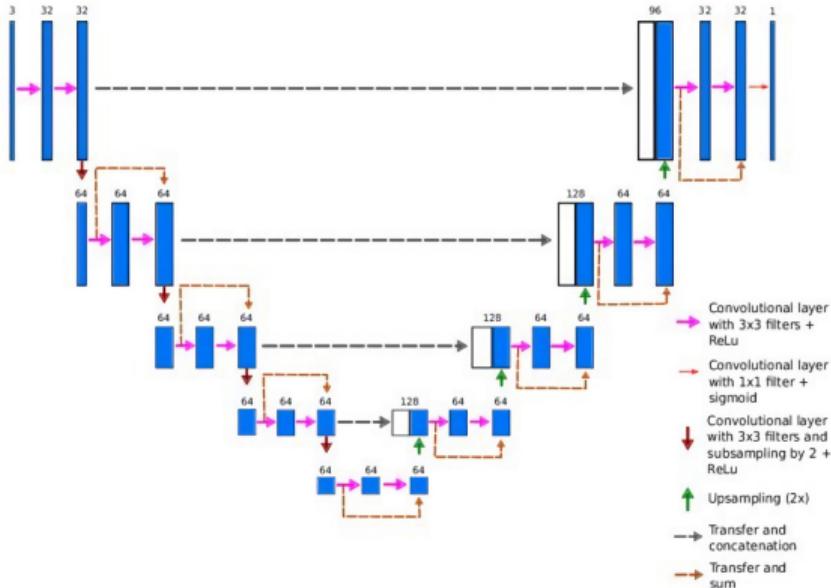
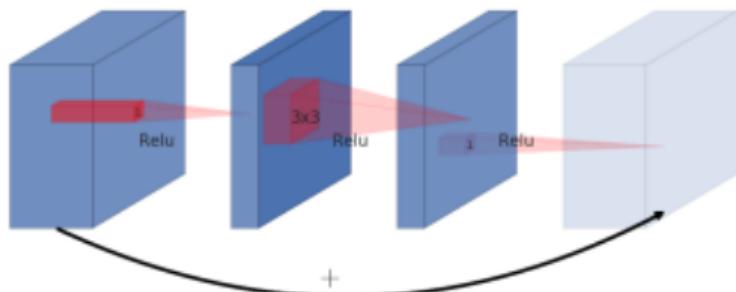


Figura 3: UNET model.<sup>2</sup>

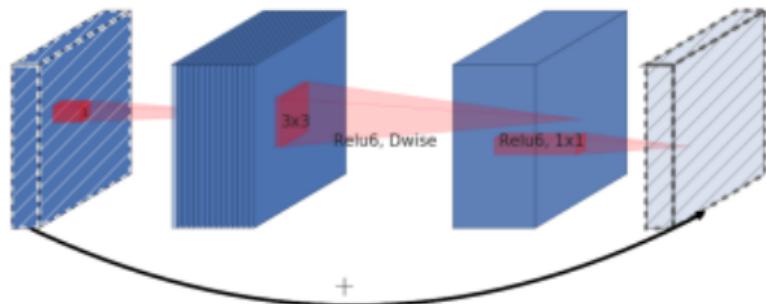
# Methods

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(a) Residual block

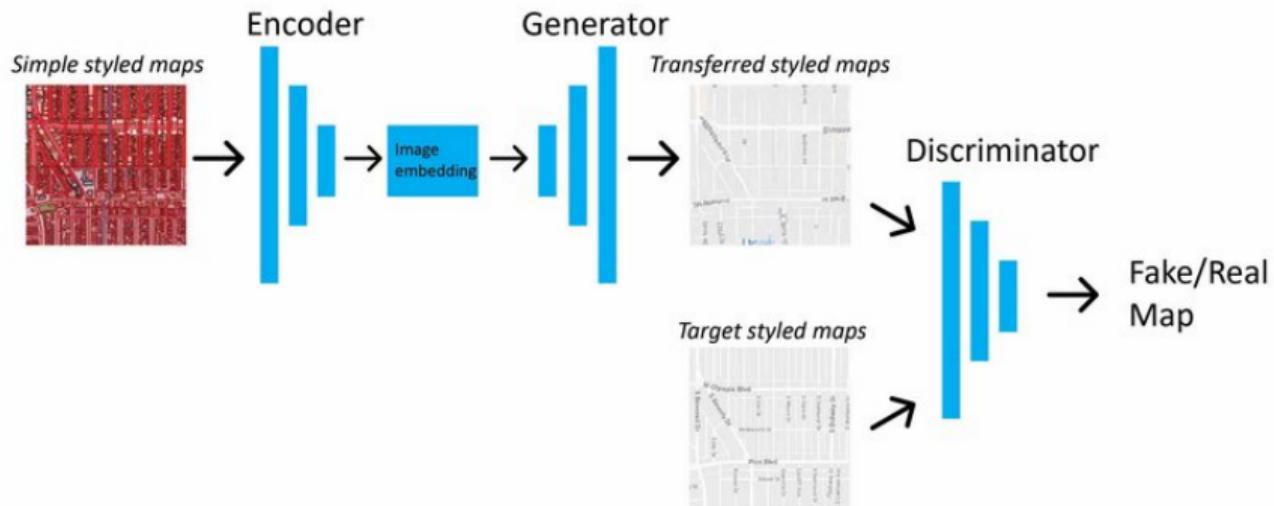


(b) Inverted residual block



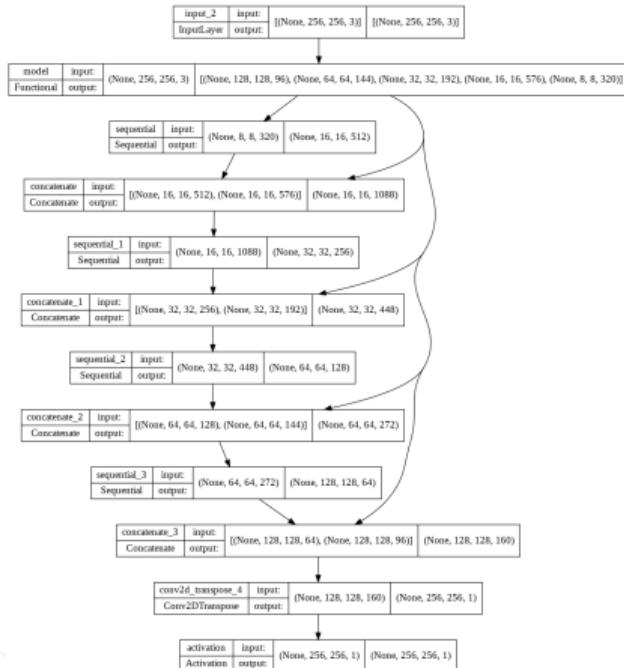
**Figura 4:** MobileNet v2.

# Methods



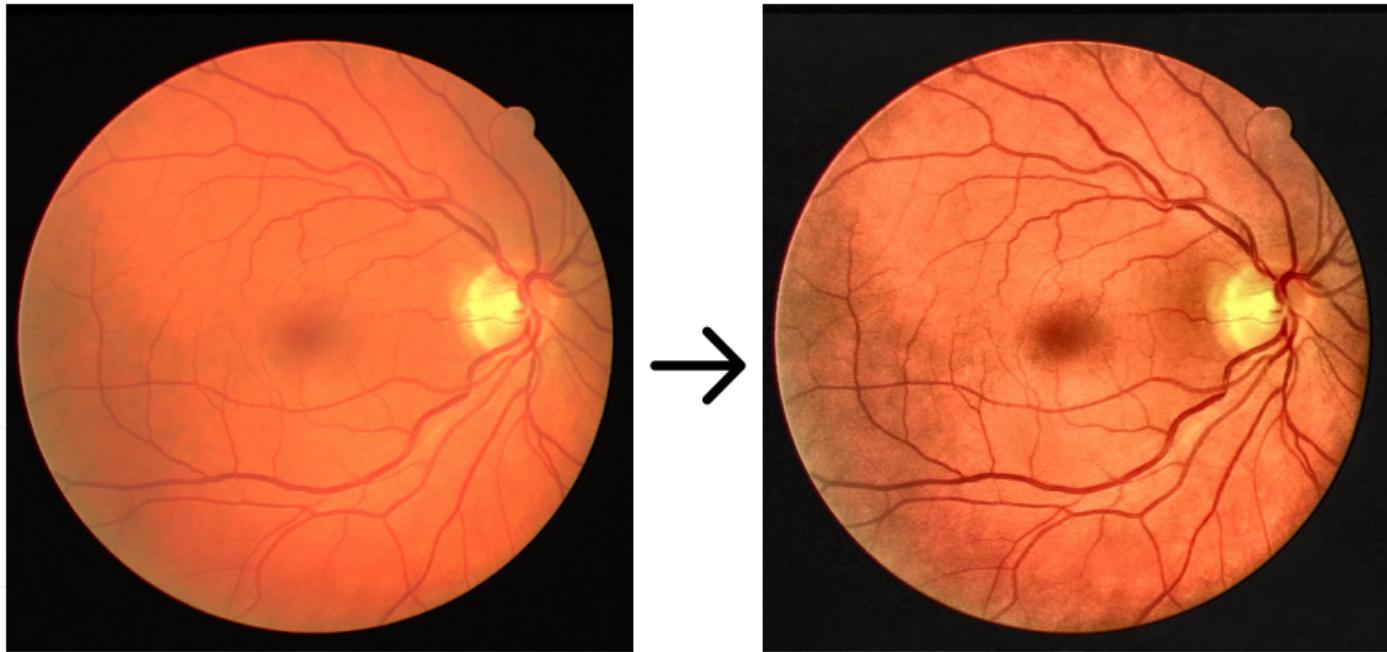
**Figura 5:** pix2pix model.

# Methods



**Figura 6:** Model with MobileNetv2 and pix2pix.

# Methods

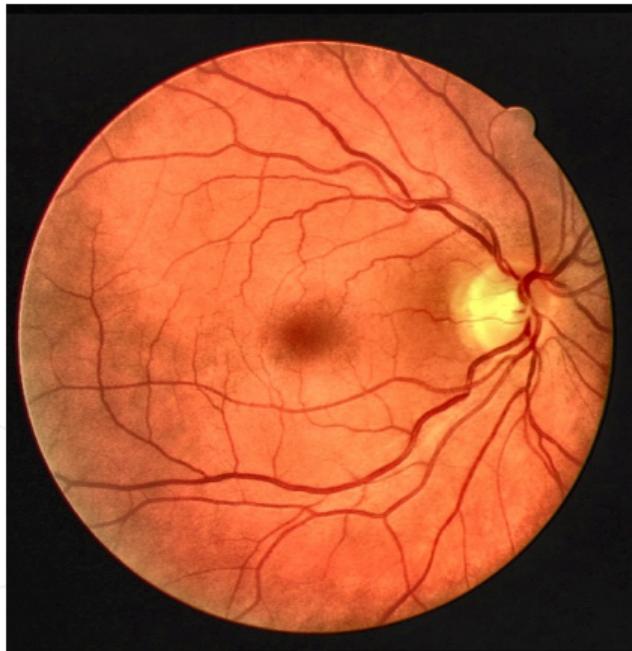


(a) Original image

(b) High contrast image

**Figura 7:** Train images.

# Methods



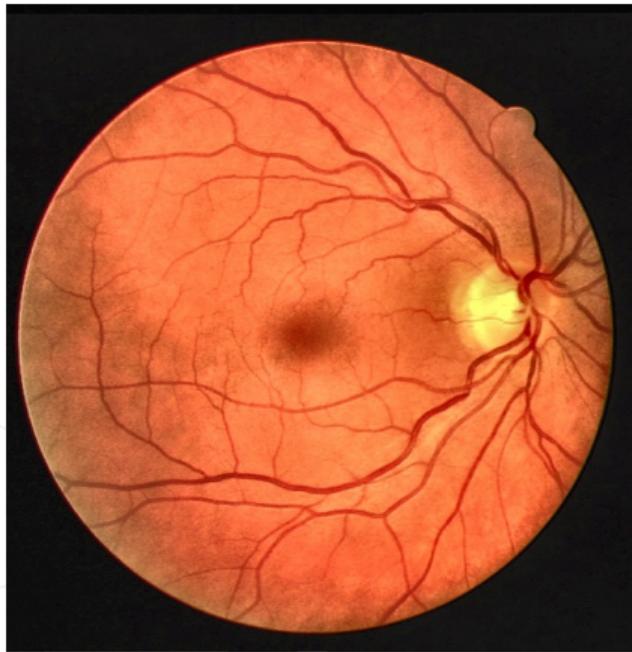
(a) Original image



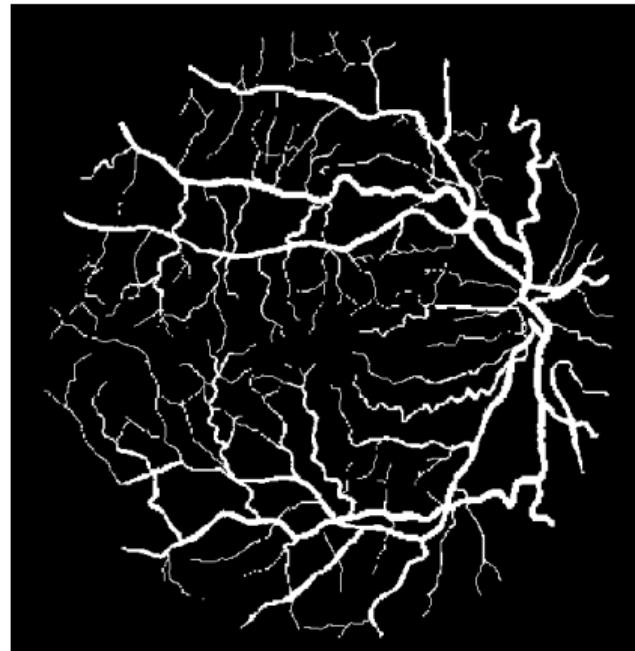
(b) High contrast image

**Figura 8:** Train images.

# Methods



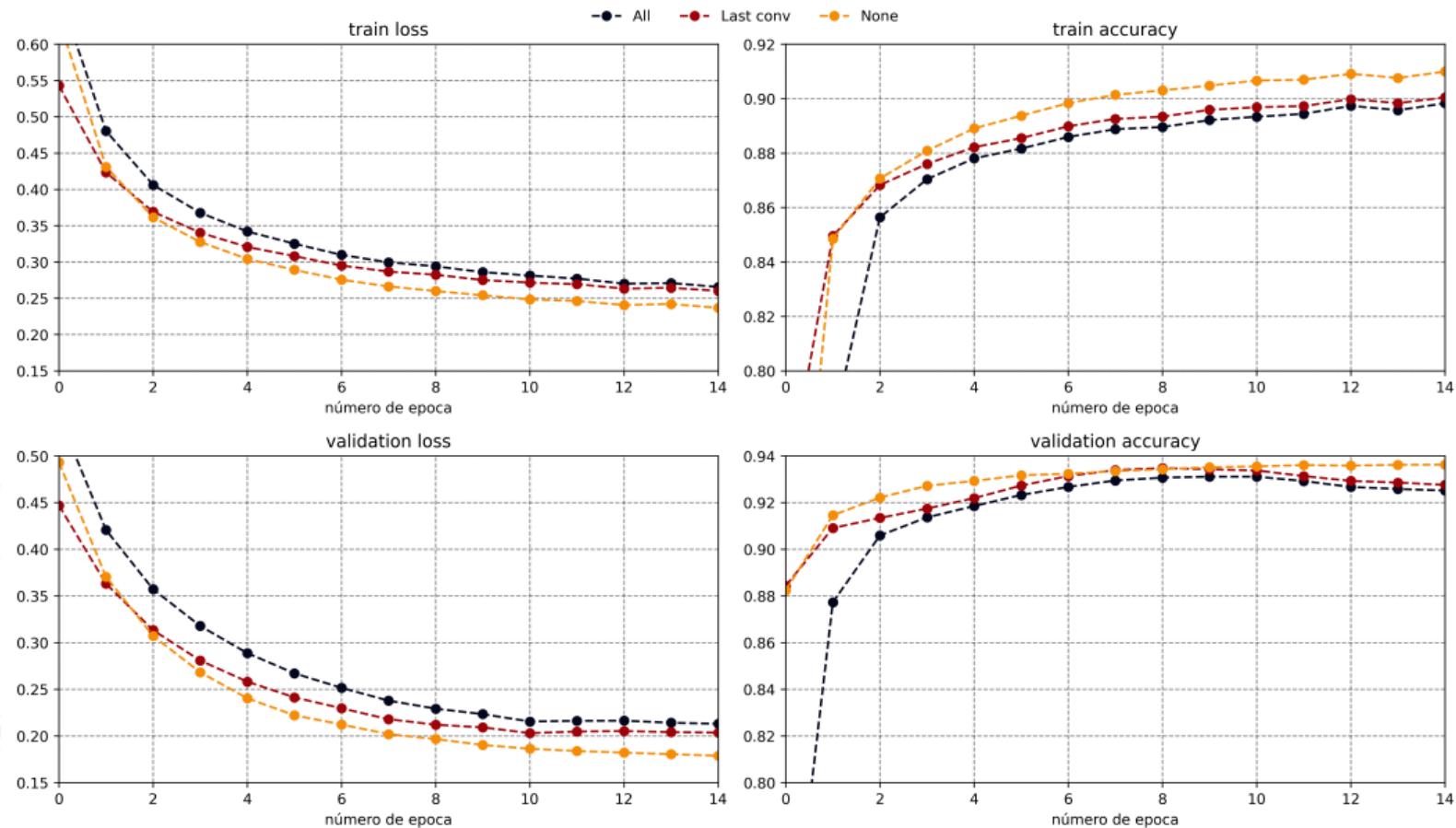
(a) High contrast image



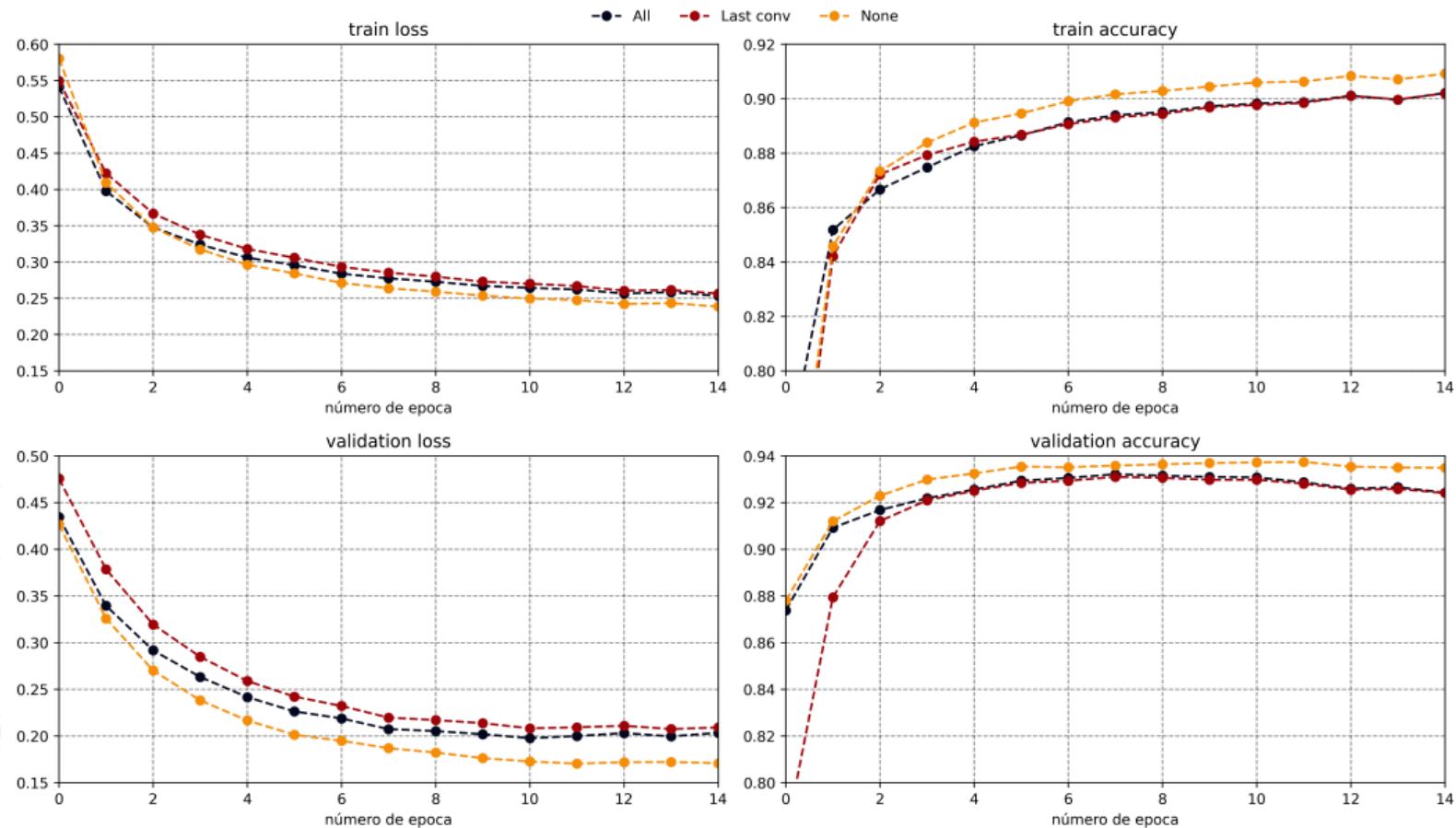
(b) Capillary vessels

**Figura 9:** Input and output model.

# Results



**Figura 10:** History from original images as input model.



**Figura 11:** History from high contrast images as input model.

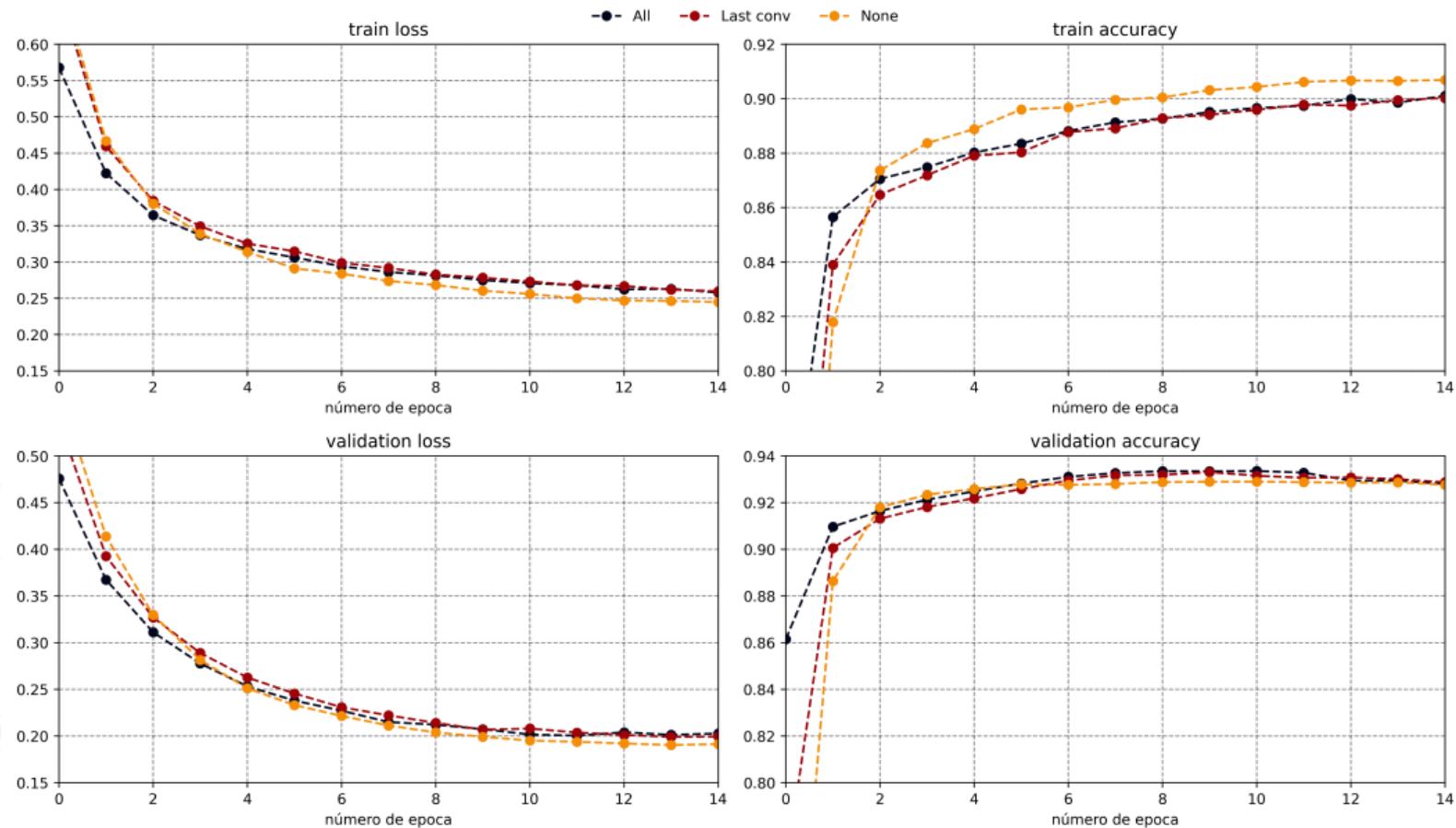
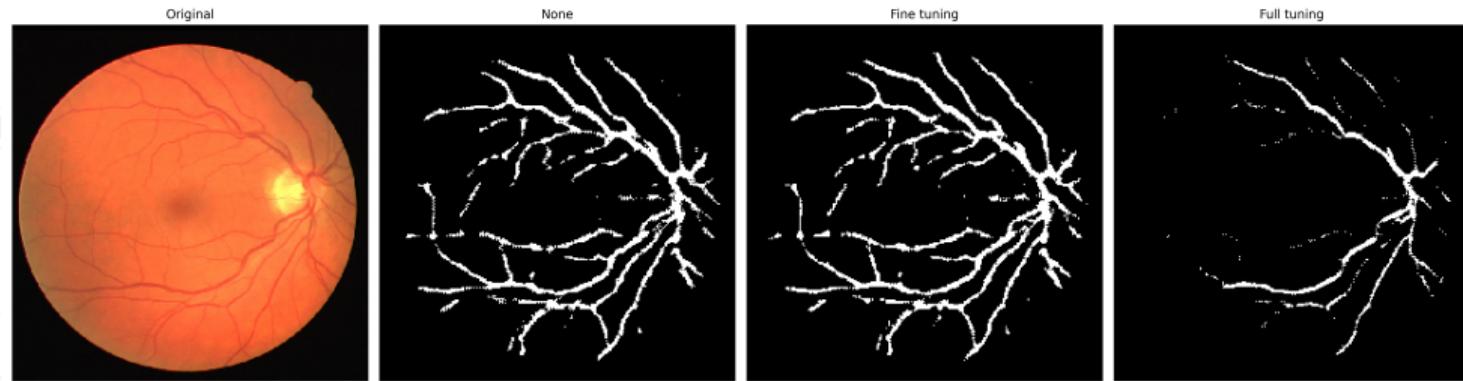
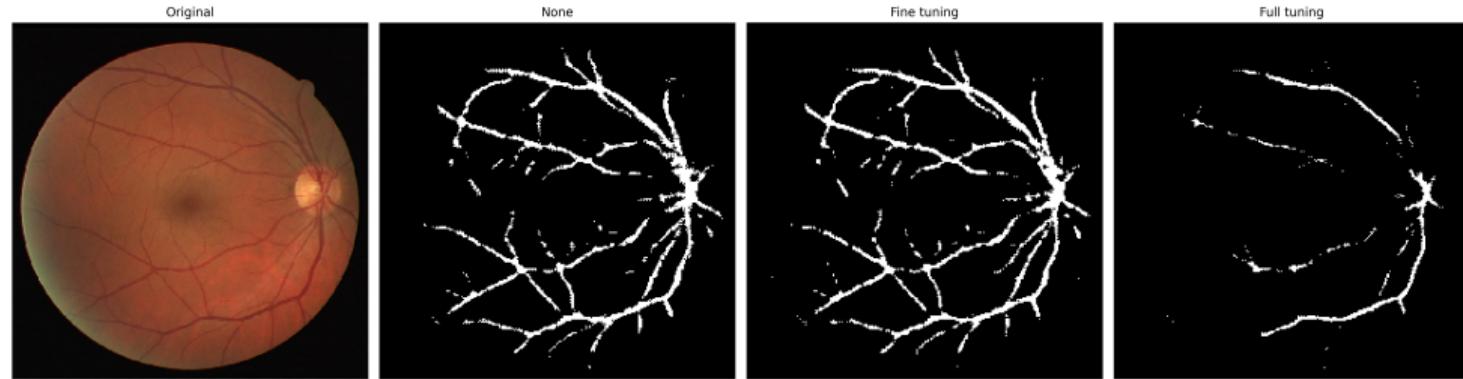
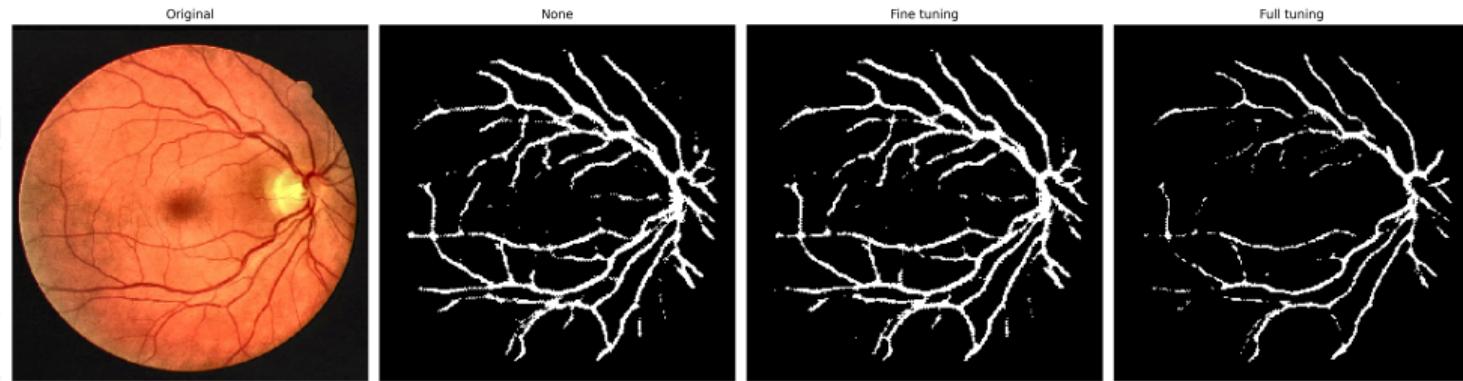
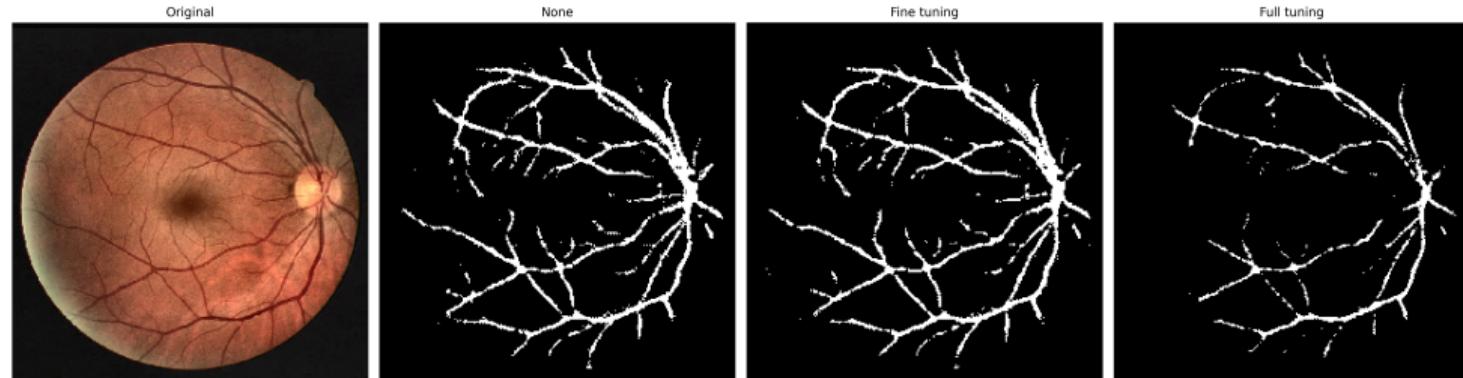


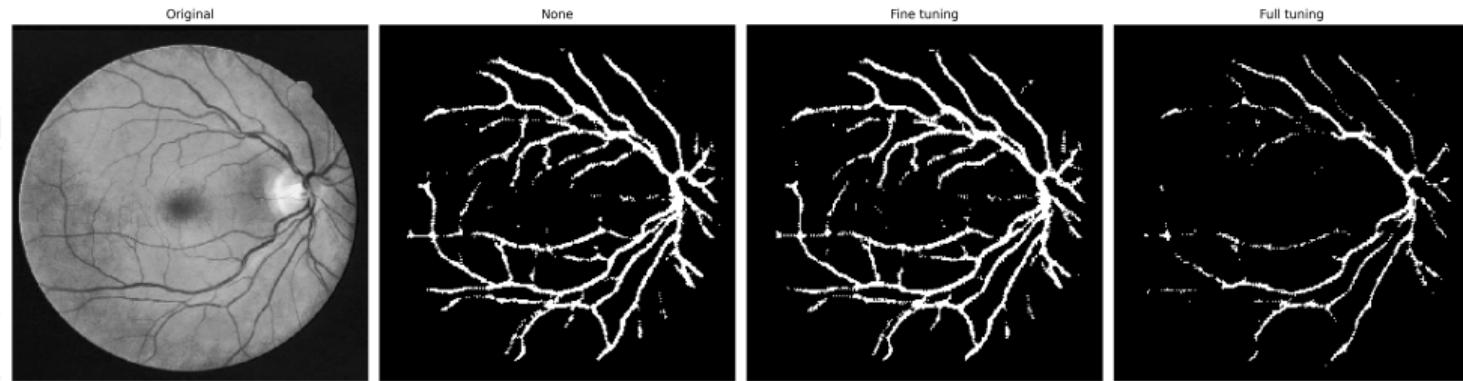
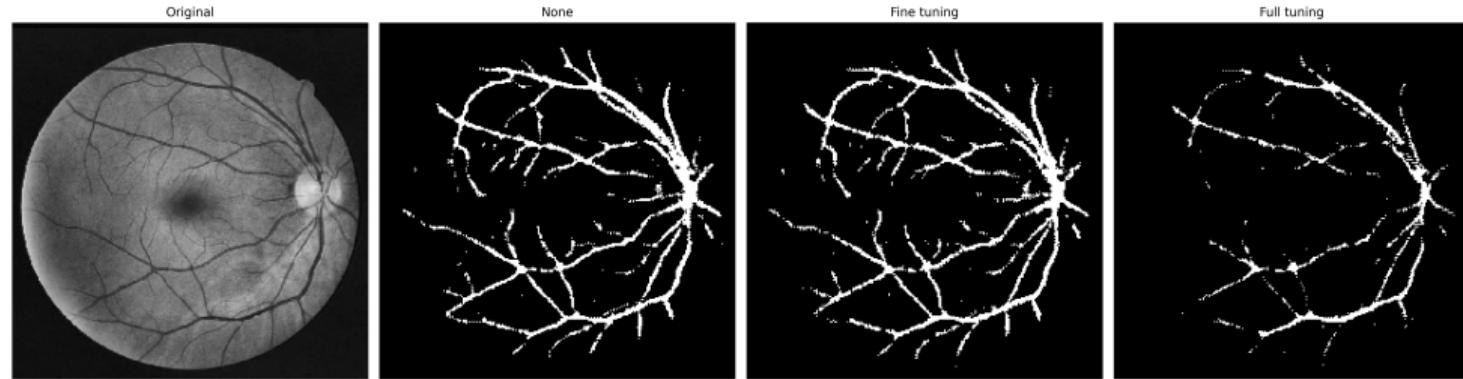
Figura 12: History from grayscale images as input model.



**Figura 13:** Results from original images as input model.



**Figura 14:** Results from high contrast images as input model.



**Figura 15:** Results from grayscale images as input model.

# Conclusions



[https://github.com/giovannilopez9808/  
Reconocimiento\\_de\\_patrones\\_proyecto\\_  
02/](https://github.com/giovannilopez9808/Reconocimiento_de_patrones_proyecto_02/)

# References I

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